Appendix D
Response to Comments on the Environmental Assessment

INTRODUCTION

Comments received on the Environmental Assessment (EA) were essential in the development of the Savanna Ecosystem Restoration project. This appendix describes the process used to analyze public comments and develop agency responses. As mandated by law, the Huron-Manistee National Forest established and maintained correspondence with government agencies and tribal governments throughout the analysis process. Copies of all documents referenced in this appendix are located in the official project record, and are available upon request from the Baldwin/White Cloud Ranger District, Baldwin, Michigan.

ANALYSIS OF PUBLIC COMMENTS

Comments on the EA were received by the U.S. Forest Service, Huron-Manistee National Forests, in many forms, including letters, emails, and telephone calls. The content analysis and response to comments was completed by the interdisciplinary team.

Direction

As a federal agency, the USDA-Forest Service must follow the procedures mandated by the National Environmental Policy Act. Procedures of this Act include soliciting comment on environmental assessments from federal, state and local agencies, tribal governments, and interested and affected publics (40 CFR 1503.1[a]). Further, the agency is directed to "assess and consider comments, both individually and collectively" (40 CFR 1503.4[a]) and prepare a response to those concerns expressed during the comment period following the September 23, 2010 release of the EA for the Savanna Ecosystem Restoration project.

Possible responses to comments considered include (40 CFR 1503.4[a]):

- Modify alternatives, including the proposed action.
- Develop and evaluate alternatives not previously given serious consideration by the agency.
- Supplement, improve, or modify analyses.
- Make factual corrections.
- Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons, which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

Comment Letter Processing

The Baldwin/White Cloud Ranger District received comments from 82 individuals, organizations, and government agencies during the formal, 30-day comment period following the September 23, 2010 release of the EA for the Savanna Ecosystem Restoration project. The

Forest Service used a coding structure and standardized application process of the coding structure to categorize comments. This method is effective in analyzing comments as required by the National Environmental Policy Act. Using this coding structure, the content analysis of each letter and email was completed. All comments received, including the content analysis, can be found at the end of this appendix.

Content Analysis

Each comment letter was read in its entirety. Each comment was identified and labeled to the left of the comment; similar issues were grouped under one comment. Content analysis involves not only identifying each action or change requested by a respondent, but also the reason(s) behind each request in order to capture the full argument of each comment. Therefore, paragraphs within a comment letter may be divided into several comments because multiple arguments are presented. Alternatively, several paragraphs that form one, coherent statement may be identified as a complete argument. A summary of comments can be found in Table D1. Each letter received including the content coding can be found at the end of this appendix.

Substantive Comments

The National Environmental Policy Act requires the interdisciplinary team to formally respond to substantive comments. Substantive comments are defined as those that fall within the scope of the decision-making for the Savanna Ecosystem Restoration project. Based on the Council of Environmental Quality's regulations a substantive comment is one that:

- Questions, with a reasonable basis, the accuracy of the information in the EA;
- Questions, with a reasonable basis, the adequacy of analysis presented;
- Presents reasonable alternatives other than those presented in the EA that meet the purpose and need of the proposed action and address significant issues; or
- Cause changes or revisions in the proposal.

Non-substantive comments, or concerns identified from them, include those that simply state a position in favor of or against an alternative, merely agree or disagree with Forest Service policy, or otherwise express an unsupported personal preference or opinion. While simple statements of opinion without a rationale were captured during the content analysis process, it is the strength of the respondent's rationale as a complete argument that provided the resource specialists of the interdisciplinary team a substantive comment to answer.

Scope of Decision

The Council of Environmental Quality's (40 CFR 1508.25) regulations define "scope" as the range of connected, similar or cumulative actions, the alternatives and mitigation measures, and the direct, indirect or cumulative impacts to be considered in the EA. The U.S. Forest Service is required to explain why comments are determined outside the scope of the project. Generally, the types of comments received, and concerns identified, that were considered outside the scope of the Savanna Ecosystem Restoration project include:

- Do not address the purpose, need, or goals of the Savanna Ecosystem Restoration project.
- Offer suggestions about areas beyond the Huron-Manistee's jurisdiction.
- Request action on concerns that are addressed by federal law or national policy.
- Suggest an action not appropriate for the current level of planning, such as actions that would require a Forest Plan amendment.
- Recommendations that did not consider reasonable and foreseeable negative consequences.
- Do not provide rationale for the suggestion or are statements of opinion.

Table D1. Summary of Comments by Commenter and Comment Type

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index			
Comment Description		**Commenter**	**Comment Number**
General			
Support of:	Alternative 1 or taking no action.	Bedau, Brower, Cabinet_Man_1, Canaan,(R) Collins, (S) Collins, (A) Deater, DeFrench, Emery, (E) Fisher, (L) Fisher, (G) Fitzgerald, (J) Fitzgerald, Hennig, Cavanaugh-Jibson, Misch, Moulds, Mumby, Postema, Race, (James) Rigby, (John) Rigby, Stiles, Wine	2D, 7A, 7L, 7S, 12A, 13A, 16A, 17A, 21E, 23A, 26A, 28A, 29D, 30A, 31A, 40A, 40J, 42N, 56A, 58A, 59A, 62A, 63A, 66D, 67D, 71A, 80F
	Alternative 2	Bertoldi, Biggart, Borgeson, Buck, Knape, McDaniel, McGowen-Stinski, Myers, Slater, Van Wesep	3A,4A, 6C, 9A, 43C, 51A, 52A, 60A, 70A, 75A
	Alternative 3	Auch, McVie	1A, 54E
	Activities proposed for KBB habitat.	Auch, Bolen, Deur, Frodey, Grady, Hamburger, Lang, Lewis, (T) Thompson, Waterman	1C, 5B, 24A, 32A, 36A, 39A, 47A, 48A, 74A, 78A
Opposed to:	Activities proposed within the Project Area.	Bedau, Evans, (G) Fitzgerald, Griswold, Hubert	2A, 27C, 30E, 38A, 41B
	Designation of the White River Area as Semiprimitive Nonmotorized.	Brower, Hennig	7Q, 40H
Concerned about:	Negative environmental impacts.	Brower, Hennig	7C, 40B
	Length of time it would take for treated areas to return to Existing Condition should the project fail.	Brower, Hennig	7O, 40G
	Interference with nature by humans.	Budde, Cabinet_Man_1, Canaan, Hubert, Routley	10C,12C, 13C, 41BB, 68A
	Similar projects that have failed.	Fisher, Hubert, Knape, McDaniel, Phillips	28D, 41CC, 43A, 51E, 61J
	Lack of historical presence of savanna.	Gould, Cavanaugh-Jibson, Szukai	35C, 42P, 72B
	Lack of historical presence of the KBB.	Jibson	42Q
	Effects that the project will have on climate change.	Hubert	41AA

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
General (continued)			
Position:	USFS does not want the general public to enjoy and use NFS lands.	McDaniel	51B
	Lack of scientific evidence for favoring Alternative 2 over Alternative 3.	McVie	54F, 54G
	Work with the Owassippe Boy Scout camp to restore the habitat on their property.	Morris, (James) Rigby	57A, 66C
	Project has been illegally started without going through NEPA.	Phillips, Vitkus	61H, 77C
	Project sets an unsustainable precedence for the management of endangered species.	Wine	80B
	Proposed activities contradict the established definition for Semiprimitive Nonmotorized Areas.	Wine	80E
Recommendations:	Conduct further studies prior to implementation.	Brower, Hennig, Cavanaugh-Jibson	7E, 7N, 40B, 42A, 42B, 42C, 42D, 42G, 42H, 42J, 42K, 42L
	Limit the creation/ restoration of KBB habitat to existing open areas.	Bedau, Bush, Cabinet_Man_1, Cramer, Evans, Glide, Greiner, Hubert, Morris, Vitkus, Wilson	2B, 11B, 12B, 18C, 27D, 34A, 37B, 41GG, 41JJ, 57A, 77B, 79A
	Increase educational outreach efforts.	(A) Deater	21C
	Add additional land for people and the butterfly.	Koperski	45A
	Include a natural and land use history of the area.	Deur	24B

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
General (continued)			
General Acknowledgements:		Bolen, Borgeson, Carignan, Dingledine, Evans, (G) Fitzgerald, Hubert, Cavanaugh-Jibson, Lewis, Marossey, McGowen-Stinski, McLouth, McVie, Miehlke, Reames, Slater, Woolworth, Zuwerink	5A, 6A, 14B, 25A, 25C, 27A, 30B, 30G, 30J, 41A, 41II, 41PP, 41QQ, 42L, 42O, 48A, 48F, 50A, 52A, 53A, 54A, 54B, 55JJJ, 55KKK, 55MMM, 64A, 70F, 70H, 70J, 81A, 82A
Comments that were received and responded to during analysis that were re-submitted during the 30-Day Comment Period:		Miehlke	55A through 55GGG
Biological Resources			
Timber Harvesting			
Support of:	Increase amount of proposed timber harvesting and burning.	Borgeson	6D
	Proposed timber management.	Carignan	14A
	Aspen management.	Cramer, Wilson	18B, 79A
	Red pine thinning.	(T) Thompson, Wilson	74A, 79A
Concerned about:	Destruction of forests.	(S) Collins, Cramer, Crancer, Evans, (G) Fitzgerald, (J) Fitzgerald, Glide, Greiner, Kozel, McDaniel, Moulds, Postema, (James) Rigby, (John) Rigby, Routley, Szukai, Wilson, Wine	17B, 18B, 19A, 27B, 30D, 31A, 34A, 37B, 46A, 51E, 62A, 66D, 67B, 68A, 72A, 79C, 80C
	Reforestation	Griswold, Hubert	38H, 41DD
	Loss of areas for firewood cutting.	Hubert	41W
	Treatment methods proposed for forest types.	Moulds, Mumby, Routley, Wilson	58A, 59A, 68A, 79A, 79B
Herbaceous Vegetation			
Native Plants			
Support of:	Planting lupine in existing open areas.	Bush	11B
Opposed to:	Use of non-Michigan seed to proliferate lupine.	Brower	7J
Concerned about:	Impacts on lupine related to road closures.	Hennig	40C
Non-Native Invasive Species (NNIS)			
Concerned about:	Spread of NNIS by horses and/or autos.	Auch, McVie	1B, 54D

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Non-Native Invasive Species (continued)			
Position:	Control treatments could occur in a future project.	Brower	7I
	The spread of NNIS by horses and/or disturbance is mis-represented in the EA.	Brower, Hubert, McDaniel, Slater	7H, 41EE, 51F, 70G
Herbicide Use			
Opposed to:	The use of all herbicides.	Hubert	41HH
Concern:	The effects to the environment from the use of herbicides.	Evans, (E)Fisher, (L) Fisher, Hubert, Cavanaugh-Jibson, Lewis, Moulds, Phillips, Routley, Szukai, Vitkus	27B, 27G, 28C, 29B, 41H, 42A, 48B, 58A, 61B, 68A, 72E, 77A
Wildlife			
Support of:	HMNF taking an active role in the conservation and recovery of KBB.	Dingledine	25B
	Managing for KBB in areas outside of the Project Area.	Brower	7B
Concerned about:	Adverse effects to KBB.	Brower, Canaan, Dingledine, Evans, Hennig, Cavanaugh-Jibson	7F, 13A, 25B, 27C, 40B, 42D
	The methods proposed for creating KBB habitat.	Evans, Hubert, Miehlke	27E, 27H, 41LL, 55III
	The effects on other wildlife.	Brustad, Bush, (T) Deater, Evans, (L) Fisher, Glide, Greiner, Hennig, Hubert, Cavanaugh-Jibson, Moulds, Phillips, Postema, Race, (John) Rigby, Routley, Stiles, (K) Thompson, Vitkus,	8A, 11E, 22D, 27C, 27F, 29A, 34A, 37B, 40E, 41X, 41BB, 41KK, 41LL, 42D, 58A, 61D, 62A, 63A, 67B, 68A, 71A, 73A, 77A, 77C
	Factors leading to the listing of the KBB as endangered.	(J) Fitzgerald	31B
Position:	Surveys of KBB are not representative.	Brower, Hennig	7K, 40D
	Roads and trails are not detrimental to the KBB.	Malburg	49B
	Proposed activities are based on studies conducted elsewhere.	Hubert	41V
	KBB is of limited value to the ecosystem.	(John) Rigby	67C

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Watershed			
Concerned about:	The effects of the designated trail on the river.	(T) Thompson	74C
Position:	Riparian corridors should be managed to provide for open conditions.	Borgeson	6B
Physical Resources			
Prescribed Burning			
Concerned about:	Effects on deer habitat.	Griswold	38D
	Emissions from initial burning.	Cavanaugh-Jibson	42B
	Emissions from secondary burning of chemically treated areas.	Cavanaugh-Jibson	42C
	The effects of burning near the sour gas line.	Cavanaugh-Jibson	42G
	The effects on river quality.	Lewis	48C
	Proximity of burning to homes.	Phillips	61A
Social Resources			
Social (general)			
Position:	Local taxpayers should have full precedence.	(G) Fitzgerald	30I
	Proposed methods not socially acceptable.	Brower	7G
	Portions of the project are discriminatory.	(T) Deater, (G) Fitzgerald, Griswold, Cavanaugh-Jibson, Hubert, Krantz, Miehlke, Szukai	22A, 30H, 38G, 42I, 41Z, 44A, 55NNN, 72C
	Lack of coordination with local citizens.	Evans	27I
Recreation			
Support of:	Designation of a non-motorized trail system.	Buck, Van Wesep	9A, 75A
	Keeping the snowmobile trails open.	Reed	65A
	Providing parking areas that would reduce walking distances for anglers.	(T) Thompson	74B
Opposed to:	Reduction of campsites.	Brower, (A) Deater, McDaniel	7D, 21C, 51C
	The closing of FR5295 to horse use.	McDaniel	51B

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Recreation (continued)			
Concerned about:	Multiple non-motorized uses on the same trail system.	Buck, McVie, Myers	9B, 54D, 60A
	Reduced opportunities to travel or recreate in the Project Area through the change in motorized access.	Budde, Bush, Canaan, Carignan, Chmelar, (R) Collins, Cramer, Crancer , (A) Deater, (T) Deater, Emery, Evans, (G) Fitzgerald, (J) Fitzgerald, Gafford, Gould, Greiner, Griswold, Hubert, Knape, Kozel, Malburg, Phillips, Race, (James) Rigby, (John)Rigby, (K) Thompson, Vitkus	10D, 11C, 13B, 14A, 15A, 16A, 18A, 19B , 21B, 22B, 22C, 26B, 27B, 30D, 31A, 31C, 33A, 35A, 35D, 37A, 37C, 38B, 41B, 41X, 41Z, 41FF, 41JJ, 43B, 46A, 49A, 61C, 63A, 66A, 66D, 67A, 73B, 77A
	Ability to park horse trailers.	Cruzan, McDaniel	20A, 51C
	Limited access for horses.	Cruzan, Hubert	20A, 20B, 41F
	Proposed location of the designated nonmotorized trail.	Hubert, (T) Thompson	41T, 74C
	The ability of hunters and anglers to bring game out.	McDaniel	51B
	Disturbance to soils, plants, and animals caused by horses and/or autos.	McVie, Myers	54D, 60A
	The timing of opening the gated roads within the WRSNA in 2010.	Miehlke	55OOO
	Safety of horseback riders during hunting season.	(T) Thompson	74D
	Loss of historic uses, roads, and campsites.	Brower, Hennig, McDaniel, Slater	7M, 40F, 51D, 70I
Position:	Lack of consideration given to all recreational user-groups.	Budde, Hubert	10E, 41OO
	Provide historical recreational use within the Project Area.	Hubert	41C, 41G, 41H, 41I, 41J, 41K
	Horseback riding falls within the recreational niche of the Forest.	Hubert	41M

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Recreation (continued)			
Position (continued)**:**	Existing resource damage could be repaired through cooperation with user groups.	Hubert	41S
	The EA implies that horses do more resource damage than the proposed habitat restoration activities.	Hubert	41LL
	Riders are losing safe places for horse use.	Hubert	41D
	USFS is using Forest Plan to eliminate horse use from public lands.	Hubert	41L
	Negatively implying that the existing trails, roads, campsites, and/or parking areas are user-created.	Hubert	41N, 41O, 41P, 41R, 41U
	Lack of participation by USFS in the repair and maintenance of areas in need.	Hubert	41Q
	Lack of reasonable places to ride horses outside of the Project Area.	Hubert	41NN
	Proposed parking lots are insufficient to meet the recreational demand in the area.	McDaniel, Slater	51C, 70D
	Insufficient designated camping areas.	McDaniel, Slater	51C, 70E
Recommendations:	Leave open all hiking/biking trails within the Project Area.	Buck	9C
	Develop a designated day-use area for boat access.	(A) Deater	21C
	Develop a camping sign-in board.	(A) Deater	21C
	Develop an annual parking pass for Pines Point.	(A) Deater	21C

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Recreation (continued)			
Recommendations (continued)**:**	Restrict horse use to the same roads that are open to motorized vehicles.	Griswold	38B
	Allow horse use to occur in the same areas that have historically been available.	Hubert	41MM
	Work with user-groups in the development of a plan.	Hubert	41OO
	Create a mountain bike-only trail system.	Myers	60A
	Allow horseback riding on USFS roads within the Pines Point Area.	Slater	70B
	Provide a water source at the horse trailer parking area.	(T) Thompson	74C
	Do not reduce/eliminate backpacking or hiking.	Lewis	48E
	Varied recreational activities and KBB habitat should both be provided for.	Chmelar, (A) Deater, Gould	15B, 21A, 35A
	Specific recommendations related to the development, maintenance, and operation of the designated trail system.	Hubert	41OO
	Horse traffic should be an acceptable use in areas where foot traffic is allowed.	McDaniel	51D
Transportation			
Support of:	Addition of FR9320 to the MVUM.	Brower	7P
	Closure of 5295, 9364, 5317, and 5354.	Lewis	48A
	Proposed road closures.	Vanden Berg	76A
	Access to private property through the use of FR5317.	Vanden Berg	76A

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Transportation (continued)			
Opposed to:	The closing of roads due to their proximity to the habitat of an endangered species.	Brower, Budde, Hennig	7R, 10A, 10D, 40I
	Closure of 5306 (off 152nd) and 9353 (south of Winston).	Lewis	48D
	The closing of roads or restricting of access without public input.	Wine	80C
Concerned about:	Limitations on emergency vehicle access.	Griswold, Hubert, Cavanaugh-Jibson, McDaniel, Slater	38E, 41RR, 42J, 51B, 70C
	The ability of private property owners to access their property.	Griswold, Vanden Berg	38F, 76A
	Enforcement of MVUM.	Miehlke	55III
	Change in user-experience due to the maintenance of the roads left open.	Wine	80D
Position:	Specific recommendations for improvement of the road system.	Hubert, Miehlke	41RR, 55HHH
	Lack of a science-based analysis in identifying the roads for decommissioning.	McVie	54C
	Forest closure orders are not in place.	Phillips	61G
Economics			
Concerned about:	High cost of project.	Bedau, Brower, Cruzan, DeFrench, Evans, (E) Fisher, (L) Fisher, (G) Fitzgerald, Gafford, Hennig, Hubert, Phillips, (T) Thompson, Wilson	2C, 7F, 7M, 20C, 23A, 27B, 28D, 29C, 30D, 33A, 40B, 40F, 41SS, 61E, 73A, 79C
	The economic advantage of bringing back the KBB.	Budde, (John) Rigby	10B, 67B, 67C
	Amount of revenue received from the USFS.	(T) Deater, Cavanaugh-Jibson	22C, 42E
	Impacts to private property values.	DeFrench, Hubert , Jibson, Ryder	23B, 41Y, 42H, 69A

Savanna Ecosystem Restoration Project Environmental Assessment 30-Day Comment Response Index (continued)			
Comment Description		**Commenter**	**Comment Number**
Economics (continued)			
Concerned about (continued)**:**	Effects of project on the local tourism industry.	Evans, (J) Fitzgerald, Hubert, Cavanaugh-Jibson, Moulds, Rigby	27B, 31E, 41FF, 42H, 66B
	Loss of State revenue due to the reduction in areas accessible for hunting and fishing.	Greiner	37D
	Use of funds received from tree harvesting.	Stiles, Vitkus	71B, 77A
Position:	Funds for project should be eliminated and diverted to local job creation.	(G) Fitzgerald	30C
	Improper use of State of Michigan ORV grants.	Cavanaugh-Jibson, Phillips	42F, 61F
	Lack of studies for future enforcement and maintenance costs.	Cavanaugh-Jibson, Phillips	42K, 61I
Other			
Old Growth			
Concerned about:	Classification of the White River corridor as old growth.	Borgeson	6E
	The inability of achieving desired ecosystem diversity through natural processes.	Borgeson	6F
Environmental Assessment (EA)			
Position:	EA was difficult to understand.	Cruzan	20C
	Public announcement carried out poorly.	Grady, Cavanaugh-Jibson	36B, 42M
	Deficiencies in the Scoping process.	DeFrench, (G) Fitzgerald, Wine	23C, 30F, 80A
	Inconsistencies in the EA.	Fisher	28B
	Conservation measures not supported by the Forest Plan.	Miehlke	55LLL

Response to Comments

Once comments were reviewed, and issues identified, responses to the issues were developed. Where applicable, responses include references to chapters or sections within the EA where more information is available. Where warranted, responses note modifications to proposed actions, additional analyses conducted, as well as clarifications and/or corrections made to the final documents in response to comments received. To see the actual comment that the response addresses you will need to go to the actual letter or email at the end of this appendix.

Commenter 1: Jeff Auch
Response:
Comment 1A: Your support of Alternative 3 is noted.

Comment 1B: We acknowledge your concern with Alternative 2 and the relationship between the continuance of horse use in the area and the potential introduction and spread of non-native invasive plant species. Under Alternative 3, horse use within the White River Semiprimitive Nonmotorized Area would be eliminated. Development of this alternative was in response to the issue of non-native species (EA, pg. 2-3). Under both of the action alternatives (2 and 3) treatment areas would be monitored for the presence of these species and treated appropriately to prevent their persistence and the potential for them to spread to other locations within Project Area (EA, pg. 2-6).

Comment 1C: We acknowledge your experience for managing the natural resources throughout this area on both public and private lands and your recognition of the need for the management activities proposed in this project. This is in alignment with the mission of the U.S. Forest Service to sustain health, diversity, and the productivity of National Forest System lands.
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Commenter 2: Amy Bedau
Response:
Comment 2A: We acknowledge your concerns related to the implementation of this project. The Savanna Ecosystem Restoration project would create savanna on approximately 2,950 acres (~19.7% of National Forest System lands within the Project Area) over the next ten years. On these acres, the objective would be to reduce tree/shrub density to an average 10-25% canopy cover (open) within 70-80% of treated areas and to an average of 25-60% cover (woodland) within 20-30% of treated areas using a variety of treatment techniques. These treatments would result in a mosaic of forested, semi-forested, and open areas that would accommodate a variety of flora and fauna while continuing to provide opportunities for hunting, fishing, hiking, and other recreational activities. The purpose of this project is not to destroy wildlife habitat and eliminate recreational use, rather to provide a habitat that meets the requirements of the Karner blue butterfly and other species that rely on the savanna ecosystem while continuing to provide opportunities for public use.

Comment 2B: On-going habitat improvement activities are not just limited to federal lands, but are occurring on private and state lands as well. Unfortunately, planting lupines in existing fields found anywhere doesn't provide the habitat needed by the Karner blue butterfly. The best locations are dependent on a variety of factors, including: soils, climate, vegetative types, and the presence of the Karner blue butterfly. The areas included in this project meet all of these

criteria and are within the Otto and White River Metapopulation Areas of the Muskegon Recovery Unit; areas identified in the Karner Blue Butterfly Recovery Plan prepared by the U.S. Fish and Wildlife Service.

Comment 2C: We acknowledge your concerns with the economic costs that are associated with this project. There would be short-term costs associated with the creation of the savanna type and long-term costs associated with the continued maintenance of the type once it is established. The result of this investment would provide essential habitat for the Karner blue butterfly and a suite of other plant and wildlife species associated with the imperiled oak savanna type. The U.S. Forest Service relies on volunteers to help accomplish many different projects each year and would not be able to achieve our Karner blue butterfly survey, monitoring, and habitat treatment goals without them. Thank you for acknowledging the potential to use volunteers to do some of the work outlined in the Savanna Ecosystem Restoration Environmental Assessment and we encourage you to contact us if you are interested in volunteering.

Comment 2D: Your support for Alternative 1, the No Action alternative, is noted.

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Commenter 3: Joyce Bertoldi

Response:

Comment 3A: We acknowledge your support of the project.

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Commenter 4: D. Jayne Biggart

Response:

Comment 4A: We acknowledge your support for this project.

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Commenter 5: David Bolen

Response:

Comment 5A: We acknowledge the efforts that Pheasants Forever has made to create habitat for pheasants, game birds, and beneficial insects through the planting of native vegetation.

Comment 5B: We acknowledge the interest that Pheasants Forever has in helping the U.S. Forest Service to accomplish the activities associated with this project because of the benefits to the game bird population.

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Commenter 6: David Borgeson

Response:

Comment 6A: We acknowledge your appreciation of participating in the planning process for activities on National Forest System lands and in your combined experiences related to the management of the resources.

Comment 6B: Your request for information relating to the effects of vegetative management activities near riparian areas is noted. The following represents how this was addressed in the Forest Plan (2006) and the references that are associated with it:

> *"When open lands and young-aged forestland exceed 66 percent of a previously forested basin, channel forming flows have the potential to double or triple in size (Verry 1986; Verry 2000), thus leading to accelerated instream erosion." (Forest Plan EIS, pg. III-197)*
>
> *"When open lands, including agriculture and urban development, and young-aged forestland exceed 66 percent of a previously forested basin, channel forming flows have the potential to double or triple in size (Verry 1986), thus leading to accelerated instream erosion (Verry and Dolloff 2001)." (Forest Plan EIS, pg. III-208)*

Verry, E. S. 1986. "Forest Harvesting and Water: The Lakes States Experience." *Water Resource Bulletin* 22(6): 1039-1047.

Verry, E. S. 2000. "Water flows in soils and streams: Sustaining hydrologic function." In *Riparian Management in Forests of the Continental Eastern United States*. E. S. Verry, J. W. Hornbeck, and C. A. Dolloff, eds. Boca Raton:CRC Press. pp. 99-124.

Verry, E. S. and C. A. Dolloff. 2001. "The challenge of managing healthy riparian areas." In *Riparian Management in Forests of the Continental Eastern United States*. E.S . Verry, J. W. Hornbeck, and C. A. Dolloff, eds. Boca Raton: Lewis Publishers. pp. 1-22.

Comment 6C: We acknowledge your support of Alternative 2.

Comment 6D: We acknowledge your request for us to consider the creation of additional early successional habitat, including aspen and oak regeneration and controlled burning. The type and locations of treatments for this project were identified based on the Purpose and Need for the project, what would be feasible to accomplish during the life of the project (i.e. 10 years), and the vegetative types that currently exist within the Project Area (EA, pg. 3-2). Beyond the areas selected for savanna creation/restoration, additional sites (23 acres) of aspen clearcut were identified for treatment. In addition, 1,050 acres within the Project Area beyond the savanna creation/restoration units were identified for treatment.

Comment 6E: The corridor of the White River is designated as Management Area 9.2: Study National Wild and Scenic River and has been designated as old growth. Although the river corridor is designated old growth, it does not preclude management in these areas, especially where these objectives coincide with those for the management of TES species (Forest Plan, pg. II-23).

Comment 6F: The activities proposed in this project are not reliant on the natural processes of fire, windstorm, or disease to achieve the desired habitat conditions that have been identified in the KBB Recovery Plan (USFWS). Rather, the habitat restoration activities associated with this project rely on a suite of adaptive management practices that include a combination of timber harvesting, prescribed burning, mechanical/chemical site preparation, seeding, and planting.

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Commenter 7: Pat Brower

Response:

Comment 7A: We acknowledge your support of Alternative 1, the No Action alternative.

Comment 7B: The creation/restoration of the savanna ecosystem type for this project is directly related to the presence of the Karner blue butterfly. The Project Area includes the White River and Otto Metapopulation areas within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (EA, pgs. 1-2 and 1-3). The Purpose and Need for this project states:

> "*Manage permanent openings and/or grasslands to meet species viability needs (Forest Plan). Maintain existing habitat and restore suitable habitats by converting forested stands into savanna for the KBB in the Muskegon Recovery Unit. Maintain sufficient habitat to meet the recovery goals for viable KBB populations within the Otto and White River Metapopulation Areas. Continue savanna/barrens restoration projects within the Muskegon Recovery Unit with emphasis on connectivity between KBB subpopulations, expansion of existing sites, and enhancing attributes within sites (USDI 2003).*" (EA, pg. 1-8)

While the activities associated with savanna restoration and creation could occur in other areas, the presence of the endangered Karner blue butterfly, in conjunction with the identified Muskegon Recovery Unit, make the Project Area a high priority for management. Fiscally, this allows us to spend the limited resources allocated to the Forest in an area with a high probability for success in achieving the purpose and need for the project.

Comment 7C: As stated in the EA (pg. 1-11), the activities associated with creation/restoration of savanna would occur using an adaptive management approach. The amount and intensity of actual activities would be based on the results of monitoring. This monitoring would include both effectiveness and implementation monitoring (EA, pgs. 2-6 thru 2-8).

Comment 7D: There are 38 dispersed camping sites identified in the White River Semiprimitive Nonmotorized Area (WRSNA) (EA, pg. 3-152) and 38 camping sites in the Otto portion of the Project Area (EA, pg. 3-157). The dispersed camping in these areas has historically been motorized-dependant. Within the Otto portion of the Project Area, those sites related to roads that are not a part of the Forest's road system (not identified on the Motor Vehicle Use Map (MVUM)) are no longer legally accessible by motorized vehicles. These sites are still available for use through non-motorized access. On roads that are shown as open on the MVUM, campsites would remain accessible and open for use under both Alternative 2 and 3. Many of the existing campsites within the WRSNA would become inaccessible by vehicles with the closure of the U.S. Forest Service Roads, but would remain available for hike-in use. To continue to provide a motorized-dependent camping experience within the WRSNA, 11 sites would be designated adjacent to county roads (EA, Chapter 2 Maps, White River Metapopulation Area: Alternative 2). In addition, this project implements the Forest Plan direction for the management of camping in the WRSNA and in Karner blue butterfly habitat. According to the Forest Plan (pg. III-6.1-6):

11 White River

a. Camping areas and sites will be designated. Sites and areas will avoid Karner blue butterfly habitat.	***S***

b. Allow dispersed camping at existing sites along open roads. Evaluate opportunities to phase out of these existing sites and develop sites adjacent to the area.	***G***

Comment 7E: We acknowledge that all of the alternatives under this project are likely to adversely affect the Karner blue butterfly. Under Alternative 1, adverse effects to the species would be related to the gradual loss of habitat throughout the Project Area as a result of taking no action. Activities under Alternatives 2 and 3 might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b) (BA/BE, pgs. 58 and 71). These determinations are made in conjunction with the USFWS. According to a letter submitted by John Dingledine (the Acting Field Supervisor for the USFWS in Lansing), dated October 25, 2010:

> *"These activities would be conducted in a manner to benefit the recovery of the endangered Karner blue butterfly (KBB) (Lycaeides melissa samuelis)…..Disturbance from KBB habitat management might displace or kill KBB within the Project Area. KBB have limited mobility and likely would not escape proposed management activities. Eggs and larvae are immobile and thus are particularly vulnerable and likely to be crushed during mechanical treatments, burned during prescribed burning, or trampled during hand-cutting. As such, the proposed action may adversely affect KBB."*

Comment 7F: We acknowledge that there is an economic investment in the activities associated with this project. It should be noted, upon review of the Environmental Assessment, we identified an error in *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209) (see the Draft EA Errata Sheet). In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3. No changes are necessary for *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (EA, pg. 3-206). While the focus of the activities included in this project would be to improve the habitat conditions for the Karner blue butterfly, they would also improve habitat conditions for a suite of other species, including game species, which are also reliant on oak savanna (EA, pg. 3-78). Through the implementation of similar projects,

including those with the M-37 Project Area and demonstration plots within this Project Area, we are in the process of determining the best practices to achieve the desired results for creating and restoring the savanna community type. As identified in the EA (pg. 3-205):

> *"The timber that is within this Project Area that would be harvested under these alternatives would not be likely to produce enough funds to cover the combined cost of doing this analysis and preparing the sale areas (layout, road improvements, timber marking, etc.). Additional funding would be necessary to accomplish the program of work that would be necessary to accomplish the successful restoration of the savanna ecosystem in this area. Due to the adaptive management approach that is used for these activities, the costs associated with these activities are extremely variable. For example, two adjacent areas would likely require different levels of treatments (both in type and scale) to successfully bring the restoration to completion. While prescribed burning alone may be sufficient at one site, an adjacent site may require tree harvesting, tree and stump removal, prescribed burning, and the seeding in of native vegetation. As a result of the differences in these types of treatments, the costs can vary considerably."*

Similar to the revenues that are identified in Table 3.44 of the EA, the costs for related project activities that are identified in Table 3.45 assume uniform treatments across all of areas identified for the proposed activities. In both cases, the values used in these tables are estimates. The actual cost of implementation could be lower based on the activities that are actually necessary to achieve the desired habitat conditions. This is determined through the monitoring of the treatment sites after the initial treatments have occurred as discussed in the EA (pgs. 3-206 and 207):

> "*These activities would be adaptive in nature, meaning that follow-up treatments would be based on the results of previous treatments, based on monitoring. As a result, determining an exact cost for the creation/restoration of savanna is not possible. The values that are shown in Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project are estimated values based on the initial treatment and do not take into consideration whether the work is carried out by Forest Service personnel or is accomplished through the use of a private contractor. As a result, the values would likely vary greatly from what is shown. "*

Comment 7G: We are currently conducting savanna restoration treatments on 365 acres within the White River Metapopulation Area under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), and implementing opening restoration treatments to restore occupied KBB sites on 431 acres within the White River and Otto Metapopulation Areas under the Karner Blue Butterfly Habitat Restoration Project (USDA Forest Service 2009c). The activities included under Alternatives 2 and 3 complement these two restoration efforts by expanding the acreage to be treated for savanna creation and opening restoration, and increasing the number of treatment techniques that can be used to meet restoration goals (EA, pg. 3-69). The sites that are proposed for habitat creation/restoration are based on existing KBB populations and on those areas where there is the greatest likelihood of benefitting the species by meeting recovery goals. While these may seem more socially acceptable, projects of this small scale are not likely to lead to a viable reproducing population of Karner blue butterfly in the White River and Otto Metapopulation Areas (6,000 per metapopulation area).

Comment 7H: We acknowledge that lupine, and other native plant species, are capable of withstanding, or even need, disturbance. The concern related to the presence or establishment

of non-native invasive species (NNIS) is the ability of these plants to out-compete native vegetation and diminish the quantity and/or quality of habitat. In addition, the presence and/or establishment of NNIS would reduce the effectiveness of the activities in the habitat creation sites.

Comment 7I: While the control of NNIS could occur in future projects, being able to gain control of these species before they have become well-established is essential in preventing them from becoming the dominant species in an area (EA, pg. 3-19). The approach of the Forest to NNIS is described in the Huron-Manistee National Forests Non-native Invasive Plant Control Project Environmental Assessment (2009, pgs. 4 and 5):

> *"The HMNF Non-Native Invasive Species Framework is tiered to the Forest Service Region 9 Non-Native Invasive Species Framework and the FS National Strategy and Implementation Plan for Invasive Species Management outline NNIP program strategies and is predicated on the following elements:*
>
> 1) *Prevention – Stop invasive species before they arrive.*
> 2) *Early detection and rapid response (EDRR) - Find new infestations and eliminate them before they become established.*
> 3) *Control and Management-Contain and reduce existing infestations*
> 4) *Rehabilitation and restoration-Reclaim native habitats and ecosystems. (USDA Forest Service 2004f)."*

Web Address: http://www.fs.fed.us/foresthealth/publications/Final_National_Strategy_100804.pdf

Use of EDRR is especially important in project areas such as this, where ground-disturbing activities are necessary to achieve the desired future condition. Many NNIS (i.e. garlic mustard) produce copious amounts of seed that can remain dormant in the soil seedbank for long periods of time, germinating when the right conditions (i.e. soil disturbance) are present. The establishment and persistence of other NNIS species is linked to their ability to spread through rhizomes and disturbance from activities in projects would stimulate the NNIS root systems to produce multiple individual stems. In other species, the spread is related to a combination of both seed dispersal and rhizomes. For NNIS to be adequately controlled requires a combination of early detection and timely and appropriate control activities. The type of activities (i.e. mechanical, chemical, etc.) that are required for control may vary by species. Not treated, these species lead to increases in infestations and the amount of time and money that may be required to achieve adequate control. While other NEPA is in place for limited spot treatment of NNIS across the Forest (Huron-Manistee National Forests Non-native Invasive Plant Control Project, 2009), it is most appropriate to include all proposed environmental actions in the current SER NEPA so as to disclose all potential intended actions.

Comment 7J: We acknowledge your opposition to the use of non-Michigan seed to proliferate lupine in the Project Area. In all of our planting efforts, attempts are made to utilize seed of the local genotype. Obtaining seed from sources outside of Michigan is a last resort, but may be necessary at times, as the number of commercial growers in Michigan is limited and our capacity for obtaining or producing seed in-house is still in the early stages of development (EA, pgs. 3-20 and 21).

Comment 7K: The annual peak flight period for the Karner blue butterfly (KBB) varies by location and year due to a combination of environmental factors (i.e. temperature, moisture, etc.) and phenological differences. The causes and responses to these variations are outlined in the KBB Recovery Plan (USFWS KBB Recovery Plan, pgs. 11 thru 13). In conducting annual surveys, the Baldwin-White Cloud District makes every attempt to survey the historically occupied habitat for the KBB during the peak flight times. The determination for the timing of the peak flight is made in cooperation with other agencies (i.e. Michigan Department of Natural Resources and Environment) and organizations (i.e. The Nature Conservancy, universities, etc.) that are conducting KBB surveys in other locations. Emergence models are used to predict when KBB will start to fly and when peak flight will occur, and field data is collected at selected occupied KBB sites within metapopulation areas to track the progress of second flight. KBB surveys are then conducted before, during, and after peak flight and models are used to estimate KBB abundance for surveyed areas.

Comment 7L: We concur that "*Alternative 1 is expected to have primarily beneficial direct and indirect effects on wildlife associated with mid- to late-successional forest habitats, and any adverse direct and indirect effects are expected to be minimal*" (EA, pg. 3-88). In addition, "*Potential adverse direct effects that Alternative 2 and 3 might have on the RFSS associated with mid- to late-successional forest types would be minimized with the implementation of the following conservation measures found in the following* (EA, pg. 3-89*):*

- *The Northern Goshawk (Accipiter gentilis atricapillus) in the Western Great Lakes Region: A Technical Conservation Assessment (Roberson, et. al. 2003);*
- *Draft Western Great Lakes Northern Goshawk (Accipiter gentilis atricapillus) Conservation Assessment (USDA Forest Service 2007c);*
- *Management Recommendations for the Northern Goshawk on the Huron-Manistee National Forests (USDA Forest Service 1993);*
- *Conservation Assessment for Red-Shouldered Hawk (Buteo lineatus) (USDA Forest Service 2002a);*
- *Bald Eagle Management Plan for the Huron-Manistee National Forests (USDA Forest Service 2006c);*
- *Northern States Bald Eagle Recovery Plan (USDI Fish and Wildlife Service 1983);*
- *Conservation Assessment for Cerulean Warbler (Dendroica cerulea) (USDA Forest Service 2003c);*
- *Conservation measures for species viability for the cerulean warbler, northern goshawk, red-shouldered hawk, and eastern box turtle outlined in the Programmatic Biological Evaluation for the Huron-Manistee National Forests (USDA Forest Service 2005); and*
- *Forest Plan Standards and Guidelines (USDA Forest Service 2006b).*

In addition, "*The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of wildlife associated with mid-to late-successional forest types* (EA, pg. 3-91). *Overall, vegetative management activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid-to late-successional forest types within the Project Area. Adverse effects would be expected to be minimal. Recreation management activities proposed under Alternatives 2 and 3 would have primarily beneficial effects to local populations of wildlife associated with mid- to late-successional forest types within the Project Area."* (EA, pg. 3-92)

Comment 7M: We concur that the National Forest System lands within the Project Area have high levels of historic and current recreational use (EA, pg. 3-149). Under Alternative 1, this use would not change. Under Alternatives 2 and 3, the intent is not to eliminate recreational use in the area. Under these alternatives, it is anticipated that the recreational use within the White River Semiprimitive Nonmotorized Area (WRSNA) would shift away from motorized-dependent recreational activities to forms of recreation not dependent on motorized access, as described under Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user(s) to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other locations of public or private land that more adequately accommodates their type of recreational use. This is described under Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

We also acknowledge the anticipated costs associated with the implementation of the activities included in this project (EA, pg. 3-206 and 209) (see also the Errata Sheet and the response to 7F).

Comment 7N: The creation or restoration of savanna associated with this project would occur through the processes of adaptive management (EA, pgs. 1-11, 3-19, 24, 30, 35, 54, 64, and 206). In adaptive management, success is dependent on the monitoring of treatment areas after activities have occurred. This allows the future treatments to be modified as necessary in order to adjust to site-specific conditions that may vary between sites. This includes such factors as local soil conditions, micro-climate and micro-topographical fluctuations, and the existing vegetative and seedbank composition. Post-treatment monitoring determines the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. As a result of this response, different locations are likely to progress toward the desired future condition at different rates and require different types and levels of treatments.

> *"In addition, the District began a demonstration project in 2008 to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat. Activities conducted for the demonstration project are covered in the Savanna/Barrens Restoration Project (USDA Forest Service 2008)." By applying what it learns from small scale demonstration projects at the landscape scale, the District will increase the*

probability of restoration success and make restoration treatments more efficient and cost effective." (EA, pgs. 3-54 and 64)

Comment 7O: We believe that the areas that you are referring to are the Demonstration Plots that are being established within the WRSNA (in the White River Metapopulation Area). Under the Savanna/Barrens Restoration Project, the District is conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat (EA, pg. 3-69). The purpose of these plots is to determine the best methods for creating and restoring the type of savanna habitat that is appropriate sustaining viable reproducing populations KBB. When complete, these areas will total approximately 104 acres. Similar demonstration plots would be established within the Otto Metapopulation Area, prior to the implementation of the savanna creation/restoration activities that are included in this project. By applying what is learned from effectiveness monitoring and small scale demonstration projects, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective (EA, pgs. 3-54 and 64).

Through the work that has been accomplished in the Demonstration Plots within the WRSNA (and prior restoration efforts made in the Newaygo Experimental Forest) we acknowledge the challenges that exist in converting the existing forested areas into healthy non-forested community types. Our intent is not to begin the restoration of the savanna in all of these areas simultaneously, but rather in stages, with the initial areas (i.e. demonstration plots) serving to guide what activities would be appropriate in subsequent areas to achieve the desired results. This adaptive approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another. As the creation and restoration of the savanna community type is progressive, it is not our intent that all of the areas that are included in this project would be complete savannas within the 10-year timeframe that you refer to. Rather that these areas would be available for the activities associated with the creation or restoration of savanna, should the monitoring of the Demonstration Plots indicate that these actions are appropriate in these areas. If shown to be appropriate, it is anticipated that some level of activity would occur in these areas within the 10-year timeframe.

Comment 7P: Your support for the inclusion of FR9320 onto the MVUM map is noted.

Comment 7Q: We acknowledge your desire to change the existing designation of the White River Semiprimitive Nonmotorized Area (WRSNA). This was considered in the EA (pg. 2-9):

> *"Comments were also received during the scoping period encouraging the Forest Service to consider changing the designation of the White River Semiprimitive Nonmotorized Area to that of Roaded Natural. The designation was reviewed again during the analysis for the most recent Forest Plan (2006) and was found to contain the necessary attributes to carry the Semiprimitive Nonmotorized designation forward. To change a Management Area designation is beyond the Purpose and Need for this project and could only be accomplished through an amendment to the existing Forest Plan."*

The purpose of project-level NEPA (such as this project) is to implement the existing Forest Plan (including any associated amendments). The designation of the WRSNA occurs as a result of

the existing Forest Plan. The activities associated with the Savanna Ecosystem Restoration Project implements this designation.

Comment 7R: The majority of road closures included in this project occur within the WRSNA. As stated in the EA (pg. 1-8): "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*" The need for the road closures in this area is also identified in the EA (pg. 1-9): "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*" The closing of roads within the WRSNA was identified in the Forest Plan (pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to ~~the~~ management for Karner blue butterfly (Forest Plan, pg. 2-26):

G Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of Forest roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). There is no direct correlation in the analysis for this project between the actions that are proposed for the transportation system and the "taking" of KBB by motorized vehicles.

Comment 7S: We acknowledge your support of Alternative 1.

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Commenter 8: Leona Brustad

Response:

Comment 8A: We acknowledge your opposition to the activities proposed in the Savanna Ecosystem Restoration Project. The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area. The effects to wildlife would be dependent on the habitat requirements of the species. These effects were addressed within the Environmental Assessment (EA) and Biological Assessment/Evaluation (BA/BE):

> "*Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early*

successional vegetative types." (EA, pg. 3-81)

Proposed vegetative management activities would increase the quantity and quality of openland habitats (e.g., openings, savanna/barrens) and early successional aspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early succession vegetative types by: maintaining open areas; providing a diversity of foraging habitats; promoting nectaring sources from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas.

> *"Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successional vegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer."* (EA, pg. 3-82)

Overall, activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-82 and 85).

> *"Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to openland habitats (e.g., openings and savannas/barrens) and early successional forest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, red shouldered hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future."* (EA, pgs. 3-90 and 91)

> *"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area."* (EA, pg. 3-91)

Overall, activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest types within the Project Area, and any adverse effects would be expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-88, 89, 91, 92, and 93).

> *"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles, and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats."* (EA, pg. 3-98)

Overall, activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-96 thru 99). Thus, the biologists determination of effects for Regional Forester's Sensitive Species under Alternatives 2 and 3 were that the proposed activities may have no effect, a beneficial effect, or impact individuals or sub-populations, but not likely to cause a trend towards federal listing or loss of viability (BA/BE, pgs. 99, 100, 103, 128, and 129).

In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71)

Therefore, there would be both adverse and beneficial impacts anticipated to occur to the wildlife as a result of the activities associated with this project depending on the habitat requirements of the species.
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Commenter 9: Brandon Buck
Response:
Comment 9A: We acknowledge your support for Alternative 2 and your desire that the proposed non-motorized trail be developed to prevent conflicts between the likely users of this trail system. One of the objectives identified in the Forest Plan (pg. III-6.1-3) for the White River Semiprimitive Nonmotorized Area was to "develop a nonmotorized trail system". We recognize that conflicts can occur between user-groups on multiple-use trail systems (EA, pg. 3-199):

> *"As the Forest Service roads would be closed off to motorized vehicles, there would not be conflicts between horses and motor vehicles on these roads under Alternative 2. These conflicts would still occur on the county road system, especially as both user groups would be concentrated. User-conflicts would also exist on the portions of the non-motorized trail system that occurs on the closed Forest Roads where mixed recreational use would be promoted. These conflicts would include horseback riders, hikers, and bikers. Without mitigating actions, there would be locations where the tread (resulting from horse use) and manure would make the designated trail in these locations difficult and/or unappealing for the other user groups."*

The design for the trail system included in this project was developed based on the responses to the Public Scoping Letter by the various recreational user-groups. The responses to this letter indicated that the primary existing non-motorized recreational use in this area was horseback riding and, as a result, the amount of conflict related to combining uses on the proposed non-motorized trail system would be minimal. The riding of mountain bikes on this trail would be considered an acceptable use, as would the use of the county road system within the Project Area. This would also not preclude the development of a separate trail system for mountain bikes in the future, if there is demand for this type of trail.

Comment 9B: The impacts on the resources by horses is acknowledged and identified in the EA (pgs. 3-13, 14, 33, 34, 40, 56, 64, 66, 67, 76, 78, 84, 93, 99, 109, 139, 140, 146, 149, 150, 158, 159, 163, 164, 166, 168, 169, 171, 182, 188, 192, 198, 199, 202, 205, 206, and 208).

Comment 9C: We acknowledge your request to leave open all existing biking/hiking trails within the Project Area. There are currently no designated biking/hiking trails within the Project Area.
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Commenter 10: Patricia Budde
Response:
Comment 10A: The majority of road closures included in this project occur within the White River Semiprimitive Motorized Area (WRSNA), Management Area 6.1. As stated in the EA (pg. 1-8): "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*" The need for the road closures in this area is also identified in the EA (pg. 1-9): "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*" The closing of roads within the WRSNA was identified in the Forest Plan (pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM
I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

G	*Karner Blue Butterfly*		
	1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
	2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
	3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of U.S. Forest Service roads within the WRSNA has been included in this project to achieve the desired future condition of non-motorized for Management Area 6.1. as a result of the Management Area designation (6.1).These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). There is no direct correlation in the analysis for this project between the actions that are proposed for the transportation system and the "taking" of KBB by motorized vehicles. There are no roads proposed for closure in the Otto portion of the Project Area.

Comment 10B: The economics related to the implementation of this project are discussed on pages 3-204 thru 3-212 in the EA. In the short-term, the economic benefits to the area would include (pg. 3-211):

> *"… additional employment opportunities associated with timber harvesting activities and the creation and restoration of the savanna ecosystem. Employment opportunities would likely be in the form of contractors and seasonal and permanent staff. Included would be such activities as: timber sale layout and administration, timber harvesting, timber stand site preparation, regeneration surveys, savanna site preparation, NNIS/savanna herbicide application, seeding and planting, road and parking lot construction and maintenance, and wildlife surveys. Further contributions to the economy would occur through the purchasing of materials and supplies necessary to accomplish the work. These activities would occur over a period of up to 10 years and, when compared with the economy of Northern Lower Michigan, would have little to no impact on the prevailing conditions. In addition to the projects that would be implemented under Alternatives 2 and 3, other similar types of projects would also be likely to occur within this Project Area and in other locations of the HMNF. These projects would also contribute to the economy of Northern Lower Michigan and would likely have beneficial cumulative effects on the public and private natural resource management sector.*
>
> *In addition, the implementation of either of these alternatives would provide payments from the 25% Fund which would be used to assist in the funding of improved transportation systems and education within the counties where treatment activities are proposed. These same types of funds would be available to other counties where similar types of projects occur. While individual projects would likely have only a small impact on the respective county coffers, cumulatively the*

income generated from the 25% Fund could serve as an important supplement in counties that have been hit the hardest by the recent economic downturn."

In the long-term (EA, pg. 3-212),

"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."

Comment 10C: The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent it from trending toward extinction. According to the Karner Blue Butterfly Recovery Plan (U.S. Fish and Wildlife Service, 2003):

"*The most important threats to the Karner blue range wide are habitat loss, which has been accompanied by increased fragmentation of the remaining suitable habitat, and habitat alteration primarily resulting from vegetational succession. Related to these is the threat of incompatible management stemming from conflicting and potentially conflicting management objectives (page 37). Habitat loss has resulted in a reduction in the number of Karner blue subpopulations, habitat fragmentation, and smaller-sized occupied sites. Habitat alteration has reduced the abundance and quality of the Karner blue's food resources (lupine and nectar plants) and subhabitat diversity. Non- management of habitat has resulted in habitat loss over time due to ecological succession. Loss to commercial, industrial, and residential development is more a threat in areas where Karner blue populations are in close proximity to cities or desirable recreational lands."* (pg. 38)

From this, it is evident that human action has already "interfered" with the habitat that is required by the KBB. Specific to this project, the Environmental Assessment (EA) identifies the role that human activities have on the populations of KBB, through the discussion of the cumulative effects on KBB on private lands within the Project Area (pg. 3-68):

"*Increases in human populations and associated land development, road construction, and recreational uses are expected on private lands within the MNF. These activities would likely result in the degradation and permanent loss of KBB habitat and directly impact individual Karner blue butterflies by:*
- *Increasing the level of disturbance (e.g., human activity, noise, and habitat degradation);*
- *Damaging wild lupine and other important KBB nectar plants;*
- *Temporarily displacing, altering movement, or disrupting normal behavior of KBB; and*
- *Increasing the risk of vehicle/KBB collisions, wildfires, visitors directly harming, harassing, or killing KBB (all life stages), illegal collection, dispersed camping, and cross country travel."*

Without the implementation of the activities in this project there would continue to be a reduction in KBB habitat on National Forest System lands in both the short-term and long-term. With the implementation of the activities in this project, there would be an increase in KBB habitat on National Forest System lands throughout the Project Area in the long-term.

Comment 10D: The majority of Forest roads that would be closed with this project occur within the White River Semiprimitive Nonmotorized Area (WRSNA) (see EA, pgs 3-185 and 186). The existing road system in this area includes a combination of jurisdictions; both U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status would not be impacted by the activities proposed under this project. In addition, motorized access to North, South, and Main Branches of the White River would continue to be provided by both Forest and county roads for recreational activities (i.e. hunting, fishing, canoeing) in areas outside of the WRSNA, in accordance with the Motor Vehicle Use Map (EA, Map 3.8). In addition, no changes in hunting or fishing regulations would occur as a result of the decision on this project. Hunting and fishing regulations are developed and enforced by the State of Michigan.

Comment 10E: Opportunities for ATV riding are not limited to the Baldwin area. Trails are open and maintained in Twin Lake (Cedar Creek Motorsport Trail) and White Cloud (M-20 Motorsport Trail). The recreational opportunities that are available on National Forest System lands are determined by the Management Area of the specific area. Management Areas are designated in the Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan). The Project Area occurs in Management Areas 6.1 (Semiprimitive Nonmotorized Area) and 4.4 (Rural). For Management Area 6.1 (White River), the recreational objectives include: 1) provide primitive canoeing, fishing, and camping areas, and 2) develop a non-motorized trail system (Forest Plan, pg. III-6.1-3). Both of these objectives would be met through the implementation of this project. For Management Area 4.4 (Otto), objectives include providing recreational facilities for camping or picnicking (Forest Plan, pg. III-4.4-3). The Desired Future Condition for this Management Area includes:

> *"Interaction between users is frequent and users are aware of services provided, such as visitor information and law enforcement. There are few opportunities to test primitive outdoor skills. The area will provide roads and trails appropriate for motorized and non-motorized uses."* (Forest Plan, pg. III-4.4-3)

This project would move the portion of the Project Area in Management Area 4.4 closer to this Desired Future Condition.

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Commenter 11: Rachael Bush

Response:

Comment s 11A, 11B, and 11C: As a species, Karner blue butterfly no longer exists in many places it once did. Karner blue butterflies occur only in healthy oak savannas. A savanna is half way between a forest and a prairie. It has scattered trees with many grasses and wildflowers. Savannas are the world's most endangered ecosystem. They are more endangered than rainforests or wetlands. Only 0.02% of the savanna in Michigan is left, which is why Karner blue butterflies are so close to extinction. There are many other endangered plants and animals in savannas: Ottoe skippers, Persius duskywings, prairie smoke, side oats grama, Allegheny plum, etc. Good Karner blue habitat is also great turkey habitat and great deer habitat. Savannas are better hunting grounds than forests or prairies because they are high in edge, habitat diversity, and wildlife food. Savannas have greater diversity of plants than any other ecosystem in

Michigan. Thus, conservation or restoration of savannas protects more per acre than restoring any other habitat. (Chris Hoving, DNRE Endangered Species Coordinator)
Many former savannas can be restored. The Karner Blue Butterfly Recovery Plan identifies those areas where the species has the best chance for continued survival and where habitat restoration and maintenance activities have the greatest chance of success (i.e. historic oak barren and savanna areas) contributing to the goal of recovery for the species. Two of these Recovery Units are on the Manistee National Forest. The Savanna Ecosystem Restoration project is located within the Muskegon Recovery Unit on National Forest System lands.

There are several ways to restore a savanna, but it requires more than planting lupine. A combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicides would be used to create a mosaic of forested, semi-forested, and open areas that can accommodate a variety of flora and fauna while continuing to provide opportunities for hunting, fishing, hiking, and other recreational activities. The purpose of this project is not to destroy wildlife habitat and eliminate recreational use, but rather to provide habitat that will allow the Karner blue butterfly and other species that benefit from a healthy savanna ecosystem to thrive, not just survive, while continuing to provide opportunities for public use.

Our intent is not to begin the restoration of the savanna in all of these areas simultaneously, but rather in stages, with the initial areas (i.e. demonstration plots) serving to guide what activities would be appropriate in subsequent areas to achieve the desired results. This adaptive approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another.
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Commenter 12: cabinet_man_1@hotmail.com
Response:
Comment 12A: We acknowledge your opposition to the activities associated with the creation/restoration of savanna that are included in this project.

Comment 12B: According to the EA (pg. 2):

> *"The Savanna Ecosystem Restoration (SER) Project Area is within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (see Figure 1.1). The recovery goal in the Muskegon RU is the development of two large viable metapopulations of KBB; each containing 6,000 butterflies. The location of these metapopulation areas is based on the overlap of historic savanna habitat and historic KBB populations. On National Forest System lands within the Muskegon RU, the Otto and White River Metapopulation Areas were identified. These two areas are the focus of the proposed Forest Service management activities for KBB in the Savanna Ecosystem Restoration project; a project with the primary objective of establishing and maintaining suitable habitat that will support two large viable metapopulations in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004)."*

The locations for the specific management activities that are associated with this project are based on a variety of factors, including: soils, climate, vegetative types, and the existing presence of KBB. The areas included in this project meet all of these criteria, and, as stated above, have been identified by the USFWS as areas where these activities are appropriate and

should be pursued. Because the KBB has a limited distribution and dispersal distance, restoration efforts are focused adjacent to occupied habitat. The areas included in this project are surveyed annually to determine the presence and abundance of KBB. While we encourage private landowners to be aware of endangered species and to manage their land in a way that does not further jeopardize the persistence of the species, the U.S. Forest Service has no jurisdiction over these lands or how they are managed.

Comment 12C: The objective of this project is not to "clear" the areas that are proposed for savanna creation/restoration, rather to provide a mosaic of varying canopy covers, which would include forested areas. The specific pieces of the mosaic which would range from open to forested would depend upon the existing site-specific characteristics and the response of individual areas to the proposed treatments. As described in the EA (pg. 1-10):

> *"Savanna creation would occur on approximately 2,950 acres over the next ten years using a combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicide using ground-based application tools. The objective is to reduce tree/shrub density to an average 10-25% canopy cover (open) within 70-80% of treated areas and to an average of 25-60% cover (woodland) within 20-30% of treated areas. These treatments would also be used to reduce the cover of undesired vegetation less than 2 meters in height to an average of <25% cover within a treated area."*

Please reference the maps at the end of Chapter 2 for the specific locations of the treatments associated with this project. The treatments required to achieve the desired results would vary between sites. This is highlighted in the EA (pg. 1-11):

> *"Not all sites would receive the same treatments. For example, relatively open forests with remnant native grass and/or nectar plant populations would require fewer treatments to achieve the desired future condition as compared to dense forests. An adaptive management approach would be used to determine the total acreage receiving each treatment and the order in which treatments would be applied. The amount and intensity of actual restoration activities would be based on the results of monitoring"*

Further, the intention of this project is not to make efforts that go against "the natural order of things", rather to conduct activities that would serve to mimic historic natural events (i.e. wildfires) that once served to keep the ecosystem represented throughout the Project Area in a natural savanna condition.

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Commenter 13: Laura Canaan

Response:

Comment 13A: We acknowledge your opposition to the activities related to the creation/restoration of Karner blue butterfly habitat that are proposed within the Savanna Ecosystem Restoration Project. Openings, prairies, savannas, and barrens have declined within the Huron-Manistee National Forests over the past century due to extensive reforestation and fire control efforts (human influences), and the process of natural succession. As naturally occurring open areas filled in with fire-intolerant woody and shade-tolerant herbaceous species, suitable KBB habitat became scarcer. Wild lupine, other important nectar plants, and warm season grasses were shaded out or out-competed. Overstory tree canopies closed, creating

more uniform light conditions. KBB corridors disappeared and subpopulations decreased in size and became more isolated. The decline in KBB habitat quality and quantity has led to a reduction in occupied subpopulations within the Forest (EA, pg. 3-52). Since 1997 (initiation of KBB surveys on the Manistee National Forest), the number of sites where the butterfly has been observed has shown a marked decline (EA, pg 3-55). Based on the analyses of KBB count data, the estimated minimum KBB abundance within the MNF was 2-3 times lower in 2009 (10,333), than in 2008 (27,405) and 2007 (34,916) (USDA Forest Service 2009a) (EA, pg. 3-54).

It is acknowledged in *Table 3.19: Determination of Effects for Endangered, Threatened, and Sensitive Wildlife Species that Might Occur within the Savanna Ecosystem Restoration Project Area*, that all of the alternatives included in this project have a finding for the KBB of "*May Affect, Likely to Adversely Affect*" (EA, pg. 3-101). The difference is in the type and duration of anticipated effects. Under Alternative 1 (the No-Action Alternative), the adverse effects to the species would be long-term, with the likely loss of the species from within the Project Area. Under Alternatives 2 and 3, the adverse effects to the species would be of comparative short duration (related to the take associated with conducting the management activities), with the intent of an increase in the number of KBB over time as a result of improved habitat conditions within the Project Area.

This was further described in the Biological Assessment/Biological Evaluation for this project (pgs. 58 and 71):

> *"KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b)."*

Comment 13B: Under all of the alternatives associated with this project, hunting, hiking, camping, fishing, kayaking, and other recreational uses would continue to be allowed throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1. Within the White River Semiprimitive Nonmotorized Area, horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Comment 13C: The intention of this project is not to "mess with [God's] creation", rather to conduct activities that would serve to mimic the effects of historic natural events (i.e. wildfires) that once served to keep the ecosystem represented throughout the Project Area in a natural savanna condition.
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Commenter 14: Gene Carignan
Response:

Comment 14A: Under all of the alternatives associated with this project, hunting, fishing, hiking, and snowmobile use, as well as other recreational activities, would continue. In addition, treatments to enhance early successional vegetative types proposed under Alternatives 2 and 3 are expected to increase habitat quantity and quality for, and subsequently population numbers of, game species such as white-tailed deer, American woodcock, wild turkey, and ruffed grouse (EA, pgs. 3-81 and 82). Under Alternatives 2 and 3 of the Savanna Ecosystem Restoration project, there would be changes to the existing transportation system. The majority of these changes would occur within the White River Semiprimitive Nonmotorized Area (WRSNA) (EA, Table 3.40). There would be no changes to the county roads system in the Project Area as a result of this project, as these roads are under the jurisdiction of the Oceana County Road Commission. While access utilizing the existing U.S. Forest Service Road system would change under these alternatives, some level of motorized access would continue utilizing the county road system in place in the WRSNA and the county and U.S. Forest Service road system in the Otto portion of the project. This road system would provide some level of vehicular access into the area, for those seeking a motorized recreational experience while providing opportunities for those wanting a non-motorized experience. We acknowledge your support for timber management activities.

Comment 14B: We acknowledge your participation in the CRP program.
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Commenter 15: Joseph Chmelar
Response:
Comment 15A: The U.S. Forest Service uses a classification system called the Recreation Opportunity Spectrum (ROS) to help describe differences in recreation settings, opportunities and experiences, and help guide management activities. Recreation settings vary from primitive, where there are more opportunities for self-reliance, to rural, which offers more facilities, better access and opportunities to interact with other recreationists. In between these two ends of the spectrum are Semiprimitive Nonmotorized, Semiprimitive Motorized, and Roaded Natural classes. Almost 87% of the one million acres of federal land within the boundaries of the Huron-Manistee National Forests are inventoried as Roaded Natural or Rural by this system (HMNF FEIS, pg. III-275). Within these two classes the opportunity to pursue the recreational activities you describe (trail riding, hiking, wildlife viewing, and driving for pleasure among others) are common.

Within the Project Area, the Otto portion is classified as Rural. The Desired Future Condition for recreation includes: "Dispersed recreation still occurs throughout the area…Roads and recreation use do not negatively affect existing KBB populations or the potential to restore habitat for the KBB." (EA, pg. 1-9) The White River portion (WRSNA) of the project is classified as a semiprimitive, nonmotorized. This ROS class includes just over 6% of the Huron-Manistee National Forests. The Desired Future Condition for recreation includes: "The WRSNA remains a popular area for recreation, though the impacts from recreation on KBB habitat are reduced. Motorized access is limited…" (EA, pg. 1-9).

Comment 15B: The combination of activities proposed in Alternatives 2 and 3 considered the MAs within the Project Area, the varied recreational users and activities occurring, and the habitat management needed for the endangered Karner blue butterfly. Both alternatives strive to provide a balanced mixture of habitat and recreational opportunities. However, we recognize that not everyone that currently uses this area will be pleased by the changes that occur as implementation begins.

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Commenter 16: Ray Collins

Response:

Comment 16A: We acknowledge your support of taking no action in Otto Township. Hunting would continue to be allowed throughout the Project Area under all of the alternatives analyzed for this project.

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Commenter 17: Sara Collins

Response:

Comment 17A: We acknowledge your support of taking no action.

Comment 17B: As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. According to the EA (pg. 1-2):

> "*The Savanna Ecosystem Restoration (SER) Project Area is within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (see Figure 1.1). The recovery goal in the Muskegon RU is the development of two large viable metapopulations of KBB; each containing 6,000 butterflies. The location of these metapopulation areas is based on the overlap of historic savanna habitat and historic KBB populations. On National Forest System lands within the Muskegon RU, the Otto and White River Metapopulation Areas were identified. These two areas are the focus of the proposed Forest Service management activities for KBB in the Savanna Ecosystem Restoration project; a project with the primary objective of establishing and maintaining suitable habitat that will support two large viable metapopulations in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004).*"

The most recent population data for KBB populations within the Project Area is discussed in the EA (pg. 3-152):

> "*KBB subpopulations within the White River and Otto Metapopulation Areas have declined over the past decade. In the DRAFT Management Strategy (USDA Forest Service 2004a), 48 and 143 KBB subpopulations were identified within the White River and Otto Metapopulation Areas, covering approximately 620 and 848 acres, respectively. In 2009, 21 and 40 KBB subpopulations were identified within the White River and Otto Metapopulation Areas, covering approximately 199 and 240 acres (USDA Forest Service 2009a). Only 29 of the 61 KBB subpopulations monitored in 2009 were occupied; 21 in the Otto Metapopulation Area and 8 within the White River Metapopulation Area (USDA Forest Service 2009a). Not only has the number and acreage of KBB subpopulations declined within the White River and Otto Metapopulations, but also the number of KBB observed during surveys has declined. Within the White River Metapopulation Area, 181, 167, and 53 KBB were observed in 2007, 2008, and 2009 (USDA Forest Service*

2009a). Within the Otto Metapopulation Area, 860, 470, and 378 KBB were observed in 2007, 2008, and 2009 (USDA Forest Service 2009a). Eighty-four percent (51 out of 61) of KBB subpopulations occupied in 2009 had Karner blue butterflies observed during field surveys (USDA Forest Service 2009b). Based on analyses of count data recorded in 2009, the estimated minimum KBB abundance was between 3,423 and 3,993 within the Otto Metapopulation Area and between 760 and 885 within the White River Metapopulation Area (USDA Forest Service 2009a)."

The habitat requirements for the Karner blue butterfly are very specific. The general requirements are summarized in the EA (pg. 3-51):

"KBB occur in heterogeneous oak/pine savanna/barrens habitats with abundant wild lupine (Lupinus perennis) (the sole food source for the KBB caterpillar), abundant adult nectar sources, warm season grasses for basking and roosting, and ants to protect larvae from parasites and predators (USDI Fish and Wildlife Service 2003). In addition, to maintain persistent metapopulations, dispersal between subpopulations needs to be maintained by connecting subpopulations with corridors and maintaining an average nearest neighbor distance of ≤1 km between subpopulations (USDI Fish and Wildlife Service 2003)."

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. Management activities would be necessary in order to create or enhance the existing habitat within the Project Area. These activities would include reducing tree/shrub density to an average 10-25% canopy cover (open) within 70-80% of treated areas and to an average of 25-60% cover (woodland) within 20-30% of treated areas. These treatments would also be used to reduce the cover of undesired vegetation less than 2 meters in height to an average of <25% cover within a treated area. The result of these treatments would produce a mosaic of forested, semi-forested, and open areas that would accommodate a variety of flora and fauna. In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of openland habitats and early successional aspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Thus, the purpose of this project is not to "destroy" forests, rather to provide a habitat that meets the requirements for the Karner blue butterfly and other species that rely on the savanna ecosystem.

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Commenter 18: Mark Cramer

Response:

Comment 18A: We acknowledge that the Project Area currently is a diverse habitat including forest and non-forest cover types (EA, pgs. 3-2 thru 3-4, Table 3.1 and 3.2, and Figure 1.1). Vegetative diversity (based on the distribution of forest and non-forest cover types) would increase through the implementation of either Alternative 2 or 3. This is shown in *Table 3.3: Alternative 1: Projected Acres of Forest Types by Age Class, 2019* (EA, pg. 3-6), *Figure 3.2: Alternative 1: Projected Acres of Forest Type, 2019* (EA, pg. 3-7), *Table 3.4: Alternatives 2 and 3: Projected Acres of Forest Types by Age Class, 2019* (EA, pg. 3-8), *Figure 3.3: Alternatives 2 and 3: Projected Acres of*

Forest Type, 2019 (EA, pg. 3-9), *Table 3.6: Alternative 1: Change in Vegetative Class Composition* (EA, pg. 3-16), and *Table 3.7: Alternatives 2 and 3: Change in Vegetative Type Composition from 2009* (EA, pg 3-19).

While Alternatives 2 and 3 of this project would limit motorized access on U.S. Forest Service roads within the White River Semiprimitive Nonmotorized Area (WRSNA), there would continue to be motorized access to the river in other portions of the Project Area and at locations that are on the opposite bank of the river, outside the Project Area. These locations are identified on *Map 3.8: Existing Recreation Sites within the Project Area* (EA, pg. 3-154). Motorized access within the WRSNA would continue on the existing county road system. These roads are under the jurisdiction of the Oceana County Road Commission and their status, open or closed, would not change as a result of this project.

Comment 18B: Forest management activities on the Huron-Manistee National Forests are guided by the 2006 Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan). The development and use of this plan is mandated through the National Forest Management Act of 1976 (NFMA) (EA, pg. 1-2). The Forest Plan divides the Forest into different Management Areas (MAs). These MAs provide for a wide variety of opportunities, outputs, and experiences across the entire Forest. Each MA has different goals and objectives that define a Desired Future Condition. Standards and Guidelines are included for each MA to assist in the implementation of the Forest Plan at the project level. The Project Area consists of MA 6.1 (Semiprimitive Nonmotorized Area) and MA 4.4 (Rural). The activities that are included in the Savanna Ecosystem Restoration project meet the objectives of these MAs. Utilizing the established Standards and Guidelines, the goal is to move these areas toward their Desired Future Condition, not destroy the forest.

Comment 18C: As an endangered species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The Savanna Ecosystem Restoration (SER) Project Area includes the Otto and White River Metapopulation Areas, for which the USFWS identified the following recovery goals:

1. Large viable metapopulations (≥ 6,000 first or second brood adults).
2. Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3. Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4. Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The sites that are proposed for habitat creation/restoration are based on the survey results and on

those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established. Regarding the "Pines Point block", we presume you are referring to the White Rive Semiprimitive Nonmotorized Area. This area is included in the Project Area and savanna creation/restoration would occur in this area under Alternatives 2 and 3.

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Commenter 19: Ian Crancer

Response:

Comment 19A: We acknowledge your opposition to the extent of the management activities that are proposed in this project. The Purpose and Need for this project is not to "destroy" forests, rather it is the creation or restoration of savanna within the Karner Blue Butterfly Muskegon Recovery Unit on National Forest System lands. Activities would not occur on private lands and the actions taken on federal lands are not intended to negatively impact private property. This project would not change the access to your private property. The extent of activities associated with this project would occur through the processes of adaptive management (EA, pgs. 1-11, 3-19, 24, 30, 35, 54, 64, and 206). In adaptive management, success is dependent on the monitoring of treatment areas after activities have occurred. This allows future treatments to be modified as necessary to adjust to the site-specific conditions of each site. Post-treatment monitoring would determine the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. The intent is not to treat all acres at the same time or in the same way, but to be cautious and move ahead when we see we are achieving the intended results.

In addition to effectiveness monitoring, the District's adaptive management strategy includes conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat. Activities conducted for the demonstration project are covered in the Savanna/Barrens Restoration Project (USDA Forest Service 2008). By applying what is learned from effectiveness monitoring and small scale demonstration projects, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective (EA, pgs. 3-54 and 64).

Comment 19B: Under all of the alternatives, hunting and fishing would continue to be allowed. In addition, treatments to enhance early successional vegetative types proposed under Alternatives 2 and 3 are expected to increase habitat quantity and quality for, and subsequently population numbers of, game species such as white-tailed deer, American woodcock, wild turkey, and ruffed grouse (EA, pgs. 3-81 and 82). Under Alternatives 2 and 3, there would be changes to the transportation system currently providing-motorized access in the Project Area. The majority of these changes would occur within the White River Semiprimitive Nonmotorized Area (WRSNA) (EA, pgs. 3-185 and 186). There would be no changes to the Oceana County road system in the Project Area and no change to the existing access to your property. While access to the existing U.S. Forest Service road system in the WRSNA would change under these alternatives, some level of motorized access would be maintained via the county road system for those seeking a motorized recreational experience.

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Commenter 20: Vera Cruzan
Response:
Comment 20A: Your concerns about the ability to park horse trailers are acknowledged. The site for the parking lot off of Arthur Road that is identified in Alternative 2 was selected for a variety of reasons: 1) it was not located in close proximity to existing Karner blue butterfly habitat; 2) it is centrally located (east and west) across the northern boundary of the White River Semiprimitive Nonmotorized Area (WRSNA); 3) it can be accessed by a county road (Arthur); and 4) the existing topography and vegetation would allow for future expansion (if necessary). In addition, other locations on National Forest System lands that are east of the designated parking lot and north of the WRSNA would continue to be available for the parking of horse trailers.

Comment 20B: Under Alternative 2, there would be approximately 19.7 miles of designated non-motorized trail that would be available for horse use. While a portion of this trail includes the "white diamond trail", the majority of the proposed trail would occur throughout the WRSNA on U.S. Forest Service roads that are no longer open to motorized vehicles. There would also be portions of new trail constructed to tie together the designated trail system. For a visual representation of the trail layout, see Map 3.11 of the EA (pg. 3-162). All areas on National Forest System lands that are outside of the WRSNA, including the Otto portion of the Project Area, would continue to remain open to horse use under all of the Alternatives. In addition, this project makes no decisions on the allowable uses of the county road systems in the Project Area, as these roads remain under the jurisdiction of the respective counties.

Comment 20C: We regret that you found the assessment difficult to understand. We make every effort to try and provide an assessment that is easily accessible to the public, while still being thorough enough to consider all of the effects related to the proposed actions in compliance with the National Environmental Policy Act.
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Commenter 21: Alan Deater
Response:
Comment 21A: We acknowledge your support for the current road system in the Project Area and your comments about the existing and proposed management of access throughout this area. Forest management activities on the Huron-Manistee National Forests are guided by the 2006 Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan). The development and use of this plan is mandated through the National Forest Management Act of 1976 (NFMA) (EA, pg. 1-2). The Forest Plan divides the Forest into different Management Areas (MAs). These MAs provide for a wide variety of opportunities, outputs, and experiences across the entire Forest. Each MA has different goals and objectives. Standards and Guidelines are included for each MA to assist in the implementation of the Forest Plan at the project level. The Project Area consists of MA 6.1 (Semiprimitive Nonmotorized Area), MA 4.4 (Rural), and MA 9.2 (Study Wild and Scenic River).

The portion of the Project Area that is designated as Semiprimitive Nonmotorized (MA 6.1) includes approximately 4,820 acres. According to the Forest Plan (pg. III-6.1-2), the Purpose of this MA includes:

> *"Management activities in these areas provide for semiprimitive, nonmotorized recreational experiences and will reduce life-threatening and property-damaging wildfire potential. Areas support a wide variety of fish and wildlife species. Management enhances and improves habitats for species which avoid human activity."*

As it pertains to motorized access, the Desired Future Condition for this MA is described in the Forest Plan as:

> **"***Some roads are present but gated to provide access only for administrative or other permitted purposes. Improvements on these roads are infrequent and maintained to minimal standards necessary for health and safety needs. Other public agency roads may be present."* (pg. III-6.1-5)

Across the entire Huron-Manistee National Forests (~978,400 acres), this MA makes up approximately 6% (~64,400 acres) of all National Forest System lands.

The portion of the Project Area that is designated as Rural (MA 4.4) includes approximately 6,580 acres. According to the Forest Plan, (pg. III-4.4-2), the Purpose of this MA includes:

> *"Management activities provide recreational opportunities, sources of firewood close to users, and moderate to high volumes of softwood timber products. Emphasis includes reducing life threatening and property-damaging wildfire potential. Wildlife management is coordinated with adjacent non-National Forest land management with emphasis on deer, grouse and wildlife management. Some small blocks will be managed to protect isolated, essential areas for endangered, threatened or sensitive species."*

As it pertains to motorized access, the Desired Future Condition for this MA is described in the Forest Plan (pg. III-4.4-3) as:

> **"***The area will provide roads and trails appropriate for motorized and non-motorized uses."*

This Management Area contains approximately 13 percent of all National Forest System lands on the Huron-Manistee National Forests.

When there are differences between a resource's existing condition with the desired condition (as described in the Forest Plan), a need for action is identified. These differences, in combination with the goals and objectives and the standards and guidelines for each Management Area, were used in the development of the Purpose and Need for the Savanna Ecosystem Restoration Project (EA, pgs. 1-7 thru 9). Based on the Purpose and Need, activities, including the management of the transportation system, were identified that would move the Project Area from the Exiting Condition to the Desired Future Condition (EA, pgs. 1-10 thru 12).

Comment 21B: While Alternatives 2 and 3 of this project would limit motorized access on the U.S. Forest Service roads within the White River Semiprimitive Nonmotorized Area, there would continue to be motorized access to the river in other portions of the Project Area and at locations that are on the opposite bank of the river, outside the Project Area. These locations are identified on Map 3.8 of the EA (pg. 3-154). There would also be continued motorized access within the White River Semiprimitive Nonmotorized Area on the county road system. These

roads are under the jurisdiction of the Oceana County Road Commission and their status, open or closed, would not be changed by this project.

The parking lot that is referred to in your comment is an improved day-use parking lot, part of the Pines Point Recreation Area. It is operated and maintained by a concessionaire, currently American Land and Leisure, Inc., under special-use permit. The parking fee ($4/day) is collected during the managed season, typically May thru mid-October. Outside of this season, access is free. Of the money collected at this site, 12% is returned to the government for site improvements. The suggestion of an annual or seasonal pass will be made to the concessionaire.

In addition to Pines Point, carry-in boat launches are located at Diamond Point, Sischo Bayou, and Podunk for access to portions of the river within the Project Area. These sites are accessible on the south bank of the river and there is no fee. Other boat access sites on the White River, outside of the Project Area, include the M-20 Rest Area, Hesperia, Taylor Bridge, and Happy Mohawk. These are in addition to the numerous undeveloped sites found at the end of two-tracks. Under Alternatives 2 and 3 of this project, a parking area would be established at the east end of Winston Road. The South Branch of the White River is accessible a short distance from this site and the access would be considered "walk-in".

Comment 21C: We acknowledge your suggestions for designated river access for day-use, boat access, educational outreach, camping area locations, and annual parking passes. We also appreciate the past efforts you have made in this area and the historical perspective that only local landowners and Forest users can provide to these projects.

Comment 21D: The bridge on 152nd Avenue was closed by the Oceana County Road Commission. The structural integrity of the bridge is compromised and continued use by vehicles could cause its failure. The closure of this bridge represents a "change in condition" from the time of the analysis for this project. As such, it will be considered in the Decision Notice.

Comment 21E: We acknowledge your support for Alternative 1, the No Action Alternative. The blue lock boxes that are located in the White River Semiprimitive Nonmotorized Area are monitoring wells that were established in the early summer of 2010 to gather information on groundwater levels at different locations within the Project Area. These wells are recording data, but that data has not yet been analyzed.

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Commenter 22: Thomas Deater

Response:

Comment 22A: We believe this project to be non-discriminatory per the USDA Non-discrimination statement:

> *"The US Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille,*

large print, audio tape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue SW, Washington DC, 20250-9410, or call (800) 795-3272 (Voice) or (202) 720-6382 (TDD). USDA Forest Service is an equal opportunity provider and employer."

Rifle deer hunting, fishing, small game hunting, bow hunting, and wild food gathering would continue to be allowed on National Forest System lands throughout the entire Project Area in accordance with the applicable state and federal laws.

The roads that you refer to in your comments are located within the White River Semiprimitive Nonmotorized Area (WRSNA) and are identified as FR5306 and FR5315 in the EA (pg. 3-195). Which roads would be opened seasonally, the rationale for opening them, and the period of time that they would be opened for was part of a Settlement Agreement to the 1986 Forest Plan. The status of these roads remained the same under the Forest Plan 2006. These roads were also identified as seasonally open on the Huron-Manistee National Forests Motor Vehicle Use Map (MVUM, 2009). Seasonal access on these roads would no longer occur under Alternatives 2 and 3 of this project. We acknowledge that the management of the transportation system in this area has caused changes in the historical recreational use. Under Alternatives 2 and 3, continued change in this use would be likely. This is identified in the EA (pg. 3-202):

"Within this Project Area, the existing Forest Service road system plays an important role in how people have historically and currently utilize the National Forest. Alternatives 2 and 3 would change this use through implementing changes to this system. With this change, there would be social impacts. The social aspects would be related primarily to the reduction in motorized access to the WRSNA. This would impact not only those who historically and currently have used this area for motorized-dependent recreation (i.e. dispersed camping, driving for pleasure, etc.), but also those who have utilized adjacent areas. It would be anticipated that as a result of Alternatives 2 and 3, there would be an increase in this type of use in the adjacent areas by those who are displaced from the WRSNA. Many of the visitors that currently use this area and prefer or require motorized recreation would be likely to move to other locations if the roads closed under these alternatives impact the areas where they have traditionally recreated. These areas are provided in many of the other Management Areas that are part of the HMNF."

Comment 22B: We acknowledge your support of some, but not all, of the road closures that have occurred within the Project Area. A copy of the Decision Notice will be mailed to you once it has been completed.

Comment 22C: The economics associated with the implementation of each of the alternatives are analyzed in the EA (pgs. 3-204 thru 212). As shown in Table 3.44 (EA, pg. 3-206), payment based on revenues generated from the sale of timber and other commodities from National Forest System lands is made to counties for education and road improvements. Additionally, Oceana County receives a payment in lieu of taxes (PILT) for federal lands within its boundary. Annually two federal payments are made to the counties; Payment in Lieu of Taxes (PILT) and either a share of the 7 year 25% rolling average payment or a share of the Secure Rural Schools State (formula) payment. The PILT is a payment to local governments to help offset losses in property taxes due to non-taxable federal lands within their boundaries.

Under this project, all of the National Forest System lands within the Project Area would remain available for public use; however, under Alternative 3, the use of horses within the WRSNA be prohibited. The types of uses and recreational experiences that are available and promoted in different parts of the National Forest vary by Management Area designations. Different Management Areas accommodate the variety of recreational experiences that users may be seeking across the Forest.

Comment 22D: It is acknowledged that there would be effects on the wildlife due to prescribed burning. These effects were considered in the EA (pgs. 3-57, 58, 73, 74, 78, 79, 88, 96, and 98).

While the biologists determined that the activities under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or sub-populations of Regional Forester's Sensitive Species, they concluded that the activities would not cause a trend towards federal listing or loss of viability (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, the biologists concluded that activities under Alternatives 2 and 3 may have insignificant or discountable indirect effects on Indiana bat, and thus would not likely adversely affect the Indiana bat (BA/BE, pg. 71).

Although activities under Alternatives 2 and 3 may adversely affect the Karner blue butterfly in the short-term, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

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Commenter 23: Kelly DeFrench

Response:

Comment 23A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

Comment 23B: Consideration to the effects that this project would have on local real estate markets was given for the three alternatives that were developed for this project, as follows:

> Alternative 1
> *"Fluctuations in property values may occur due to local, state, or national market trends and as a result of the site-specific characteristics of individual properties. Individual consumers have little control over the market trends in real estate. The site-specific values associated with individual properties are in some ways related to personal preference. For example, one person may place more value on a solitary dwelling in a country setting, while another may place more value on an urban dwelling with neighbors close by. Therefore, management activities that affect an existing*

environment may decrease the value of that environment to one landowner and increase the value of the environment to another. This alternative would continue to provide adjacent landowners with an environment that is consistent with what has been present historically." (EA, pgs. 3-210 and 211)

Alternatives 2 and 3

"As a result of the activities associated with the creation and restoration of savanna, Alternatives 2 and 3 would alter the viewshed of adjacent private landowners within portions of the Project Area. While these changes may impact the perceived property values to the existing private landowners, there may be others who would prefer the viewshed that will be created. The projects proposed under these alternatives are not expected to cause fluctuations in the values of real estate within or adjacent to the Project Area, especially when compared with occurring trends across the Northern Lower Peninsula of Michigan." (EA, pg. 3-212)

In addition, the effects that this project would have on deer and turkey populations were also considered in the EA:

"Under Alternatives 2 and 3, savanna creation and KBB opening restoration also may improve habitat for herbivores occurring within the Project Area. In particular, deer may experience an increase in habitat quantity and quality, potentially causing localized increases in deer numbers and increased herbivory on wild lupine and other nectar plants within savanna creation and KBB opening restoration areas." (EA, pg. 3-81)

"Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successionalvegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer. Overall, vegetative management activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successionalvegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal." (EA, pg. 3-82)

"Approximately 3,000 acres of mature forest would be converted to openland habitats (e.g., openings and savannas/barrens) and early successionalforest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, redshouldered hawks, bald eagles, and black bears." (EA, pgs. 3-90 and 91)

"Other wildlife species preferring openings or savannas/barrens for parts of their life cycles that might experience a reduction in habitat quantity and quality under this alternative include the ruffed grouse, red-headed woodpecker, whip-poor-will, eastern box turtle, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer." (EA, pg. 3-77)

Good Karner blue habitat is also great turkey habitat and great deer habitat. Savannas are better hunting grounds than forests or prairies because they are high in edge, habitat diversity, and wildlife food. Savannas have greater diversity of plants than any other ecosystem in Michigan.

Thus, conservation or restoration of savannas protects more per acre than restoring any other habitat. (Chris Hoving, DNRE Endangered Species Coordinator)

Comment 23C: We apologize that you were not included on the mailing list for the initial public scoping letter for the Savanna Ecosystem Restoration Project. We make every attempt to identify potentially interested parties, including adjoining landowners, for projects, but sometimes we make mistakes. For this project,

> *"A scoping letter, dated December 10, 2009, was mailed to approximately 1,011 interested parties, including county and township officials, businesses, members of the general public, industry, property owners within the Project Area, environmental groups, and tribal representatives. The scoping letter described the existing condition of the resources within the Project Area and outlined the Savanna Ecosystem Restoration Proposed Action. Public involvement for the project also included listing of the project in the [Forest's] Schedule of Proposed Actions as well as posting the scoping documents on the Forest's website. The scoping letter asked for any issues relevant to the site-specific proposal. During the scoping period, approximately 114 responses were received."* (EA, pg. 1-12)

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Commenter 24: Jan and Christine Deur

Response:

Comment 24A: We acknowledge your appreciation of our efforts.

Comment 24B: The history of the vegetation on the lands that now encompass the Huron-Manistee National Forests has been described in detail in the Savanna Ecosystem Restoration EA and the Final Environmental Impact Statement (FEIS) that accompanies the 2006 Land and Resource Management Plan.

According to the EA (pg. 3-18):

> *"Historically, approximately 10 percent (or 60,000 acres) of the Manistee National Forest was made up of some type of savanna system (HMNF Programmatic Biological Evaluation 2005). Fire was the major disturbance factor influencing the creation and maintenance of these systems, with the most open areas likely burning in successive years (Corner pers. comm. 2003c.f.; USDA Forest Service 2005). In an unaltered condition, savannas support a diverse flora including numerous species that are characteristic of dry prairies. A number of plant and animal species were reduced in frequency of occurrence and density as these communities became closed canopy forests (VandeWater 2004). The savanna ecosystem is now considered rare throughout its historic range in Michigan, with the majority having either been destroyed through land conversion or altered as a result of plant succession (Chapman, et al. 1995)."*

According to the FEIS (pgs. III-37 thru 40):

> <u>*Vegetative Diversity (Mid-1800s)*</u>*:*
> *"The best quantitative data on early vegetation of the area of the present Huron-Manistee National Forests are found in the notes from the General Land Office surveys of 1816-1856. This information has been gathered and interpreted by numerous researchers….The oak/pine type was dominant and covered 65 percent of the area. The species composition of this type varied from red oak and white and red pines on the more productive sites to black and white oaks and jack and red*

pines on the less productive sites. Aspen occurred in small pockets throughout the area. The oak/pine type was found on sites ranging from the sand plains to gravelly ridges and morainal hills. About 20 percent of the area was in the hardwood type. This type included primarily sugar maple, beech, yellow birch, hemlock and white pine. This type was found on productive soils in the morainal hills. The pine type was found on about 10 percent of the area. The primary species were white, red and jack pines. This type generally was found on sandy soils."

"The lowland conifer and lowland hardwood types were scattered throughout the Forests along rivers and streams. These types covered less than 10 percent of the present Forests' area. The entire area was not covered by a continuous forest, even though most early explorers describe it that way. Unstable, scattered dunes bordered Lake Michigan (Santer 1977), and the interior contained openings created by fire, insect, disease and windthrow. Some areas along the southern boundary of the Manistee National Forest contained open prairie. The majority of the mid-1800s timber stands were old growth. Wildlife species associated with old growth flourished. Many large cavity or snag trees, woody ground debris and an understory structure associated with old growth were features which dominated most stands. Wildlife species associated with the early successionalcommunities were present in small numbers."

<u>Vegetative Diversity (1909 to 1938)</u>:
"The northern Lower Peninsula area was drastically altered between 1840 and 1938. The old growth timber had been harvested, and post-logging fires had killed many second growth stands. About one-third of the area was now open. Farming had been tried, but farms failed in most areas because of sandy soil conditions. Early successionalvegetative types covered most of the area. Aspen, jack pine, birch and other short-lived species were common. Many of the areas which once had been dominated by mature northern hardwoods now contained young stands of the same type. Much of the area previously covered by the pine and oak/pine types had been so damaged by post-logging fires that only open sand blows and scattered trees remained. Many of these areas were planted to jack and red pine soon after the National Forests were established. Fire prevention, which followed the establishment of the National Forests, was an essential element in shaping today's Forests."

<u>Vegetative Diversity Present (2003)</u>:
"The vegetation found on the Huron-Manistee National Forests today, to a large degree, is the result of the fire control efforts and the extensive reforestation program carried out between 1920 and 1960. Many of the open areas were planted to red, white and jack pine. These trees, and the young stands that existed when the Forests were established, are maturing and provide a variety of timber products. The present mixture of vegetative types and age classes provides diverse habitats for a variety of wildlife species."

The FEIS also describes some of the extinctions and extirpations that have occurred in the region over time.

"In the period of time between the retreat of the last glacier that covered Lower Michigan some 12,000 to 15,000 years ago and the arrival of Europeans, there is evidence that six mammals became extinct: the giant beaver, American mastodon, Jefferson mammoth, flat-headed peccary, Scott's moose and woodland musk ox. Other life forms, including plants, also became extinct. Their extinction is believed to have been in response to natural environmental changes and the inability for these species to compete with better adapted species. During the first 150 years of

European expansion into the Great Lakes Region–1650 to 1800– there were few settlers, settlements were sparse and settlers engaged in trade, mainly for fur. Little was done to alter the environment during this time. Trapping and hunting of fur and game animals had adverse effects on local wildlife populations, but not species.

Settlement and exploration later became extensive. Logging, agriculture, mining and other pursuits caused abrupt and extreme environmental alterations. Heavy exploitation of game and fur animals reduced the numbers of these species. Within the succeeding years of settlement and growth, seven species of mammals and two species of birds were extirpated in Michigan. The mammals were: American marten, fisher, wolverine, mountain lion, elk, caribou and bison. The birds were the passenger pigeon and wild turkey. The numbers of many other species, including beaver and deer, declined drastically.

With the advent of modern resource management, the populations of many species, such as deer and beaver, were brought back from near extinction or to greater abundance. Some species that were extirpated from Michigan, such as elk, American marten and wild turkey, have been reintroduced. However, a number of species still face extinction in Michigan because of continuing environmental changes. A listing of the Endangered, Threatened and Sensitive species can be found on the Forest Service, Region 9 website (http:\\www.r9.fs.fed.us.html)." (FEIS, pg. III-32)

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Commenter 25: John Dingledine, United States Fish and Wildlife Service

Response: N/A

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Commenter 26: Richard Emery

Response:

Comment 26A: We acknowledge your support for Alternative 1, the No Action Alternative.

Comment 26B: Under all of the alternatives analyzed in the Savanna Ecosystem Restoration Environmental Assessment, hunting, fishing, hiking, snowmobiling, horseback riding, and other recreational uses would continue. Under Alternatives 2 and 3, there would be changes to the transportation system currently providing motorized access in the Project Area. The majority of these changes would occur within the White River Semiprimitive Nonmotorized Area (WRSNA). The actions proposed are found in Table 3.40 of the EA (pgs. 3-185 and 186). These changes to the U.S. Forest Service road system address the Purpose and Need for the project and move towards the Desired Future Condition of providing a semi-primitive non-motorized experience in the White River area.

There would be no changes to the county roads in the WRSNA as a result of this project, as they are under the jurisdiction of the Oceana County Road Commission. While access on the existing U.S. Forest Service road system would change under these alternatives, some level of motorized access would be maintained in the future-on the county road system.

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Commenter 27: Elizabeth Evans

Response:

Comment 27A: We acknowledge the recreational experiences that you have had in the Project Area.

Comment 27B (methods): We acknowledge your concerns with the methods that would be used to accomplish the activities that are proposed in this project. The Savanna Ecosystem Restoration project would create savanna on a maximum of 2,950 acres (~19.7% of National Forest System lands within the Project Area) over the next ten years using a combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicide using ground-based application tools. The objective is to reduce tree/shrub density to an average 10-25% canopy cover (open) within 70-80% of treated areas and to an average of 25-60% cover (woodland) within 20-30% of treated areas. These treatments would also be used to reduce the cover of undesired vegetation less than 2 meters in height to an average of <25% cover within a treated area. The goal of these treatments would be a mosaic of forested, semi-forested, and open areas that would accommodate a variety of flora and fauna. Alternatives 2 and 3 would also follow an adaptive management approach, modifying treatments in response to effectiveness monitoring and using demonstration projects to determine the most efficient and effective restoration techniques. This would increase the probability of restoration success within the Project Area. In some cases, one or two initial treatments could potentially be sufficient to meet objectives, without additional types of treatment being implemented (EA, pgs. 3-30 and 64).

Comment 27B (herbicides): We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would follow the regulatory amounts permitted under the regulations of the U.S. Environmental Protection Agency as deemed safe for humans and the environment and as indicated on the regulatory limits as prescribed on the pesticide product labels. No safety limits will be exceeded related to the use of herbicide in any action of this project. Application would only be permitted in two different circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual stump sprouts (i.e., oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur (~360 acres).

These circumstances were described in the EA:

> *"42 acres of non-native invasive plant control by mechanical or manual removal and/or herbicide. Additionally, treatment of up to 10% of savanna creation and existing openings acreage may need treatment to reduce competition between native plants and non-native invasive species."* (EA, pg. 2-4)

> "*Herbicides (see Appendix C) using ground-based application methods at recommended label rates to suppress oak and cherry sprouting, carex, and bracken fern, would be used to supplement mechanical, hand tool, and broadcast/pile burning treatments to attain the desired canopy conditions.*" (EA, pg. 3-10)

> "*Undesired sprout includes the herbicide stump treatment of trees, especially oaks, cut to open up canopy cover and restore/create savanna habitat for Karner blue butterfly. In cases where timber cuts and burns are not sufficient to remove individual trees, stump application may be applied.*" (EA, pg. 3-25)

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of the EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness.

Comment 27B (recreation): We acknowledge your concerns with the impact that this project may have on recreational use within the Project Area. Under all of the alternatives analyzed, hunting, fishing, hiking, snowmobiling, horseback riding, and other recreational uses would continue.

Comment 27B (economics): We acknowledge your concerns with the effects that this project may have on the economy. The economic effects relating to this project were considered in the EA (pgs. 3-205 thru 212). Specifically, the direct and indirect effects to local tourism were considered on pages 3-205 and 206.

> *"The closing of roads within the SPNMA would cause a shift in the type of recreational use within this area. The majority of existing use in this area is dependent on motorized vehicle access, either directly (i.e. driving for pleasure) or indirectly (i.e. the hauling of campers or horse rigs). Limiting the motorized access in this area to the existing county roads would change the recreational experience in this area. As a result, some of the existing motorized-dependent users would likely make a choice to go to other locations both inside and outside of the Project Area." In the short-term, this shift would likely have minor economic impacts for those that are immediately adjacent to the Project Area; however, these impacts would not be likely to extend beyond the boundaries of this analysis (50 mile radius). These impacts would be more pronounced under Alternative 3, as horse use would be limited to areas outside of the SPNMA. Again, this use would also be likely to shift to other locations of the Forest and be unlikely to have major economic impacts that would extend beyond the analysis boundary.*
>
> *In other areas throughout the Project Area, the short-term recreation use on the Forest would be displaced during harvesting operations and periodically thereafter during the follow-up restoration treatments. This displacement would not have lasting economic impacts within the analysis boundary, as users would likely move to other adjacent areas on the Forest during the period of displacement."*

The cumulative effects to the economy were considered on page 3-212:

> *"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."*

Comment 27C: We acknowledge your concern about the effects that this project would have on other species within the Project Area. The only other endangered species known to have potential habitat within the Project Area is the Indiana Bat. The EA considered the effects of the

proposed management activities on this species (pgs. 3-69 thru 77), as did the Biological Assessment/Biological Evaluation (BA/BE) for this project.

Other non-endangered species of wildlife are known or may occur within the Project Area. The effects that this project would have on these species are discussed by habitat type in the EA (pages 3-77 thru 103). Overall, the biologists determined that although the activities proposed under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or subpopulations of wildlife, fish, and plants species within the Project Area, the treatments would not cause a trend towards federal listing or loss of viability (BA/BE, pgs. 99, 100, 103, 128, and 129).

Comment 27D: We acknowledge your questions relating to the locations and types of treatments that are proposed within the Project Area for the Karner blue butterfly. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The Savanna Ecosystem Restoration (SER) Project Area includes the Otto and White River Metapopulation Areas, for which the USFWS identified the following recovery goals:

1. Large viable metapopulations (≥ 6,000 first or second brood adults).
2. Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3. Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4. Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established.

Comment 27E: The intention of this project is to create or restore the habitat for the Karner blue butterfly in this area to a condition that is consistent with the description that is provided on the USFWS website and quoted by you in your letter. As described under 27B (methods), the goal is a mosaic of forested, semi-forested, and open areas that accommodate a variety of flora and fauna, not a clearcut of thousands of acres. Post-treatment monitoring determines the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. This allows for future activities to be modified, as necessary, to adjust treatments to site-specific conditions. Different locations are

likely to progress toward the desired future condition at different rates and require different types and levels of treatments providing a patchwork of habitats.

Comment 27F: The effects that this project would have on wildlife species are discussed in the EA (pgs. 3-41 thru 103) and the Biological Assessment/Evaluation (pgs. 46 thru 100). The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area, depending on the habitat requirements of the species. Overall, the activities proposed under Alternatives 2 and 3 might have both adverse and beneficial effects on wildlife populations within the Project Area, and any adverse effects are expected to be minimal.

1. **A**ctivities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area (EA, pgs. 3-82 and 85).
2. Activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest types within the Project Area. Any adverse effects would be expected to be minimal with the implementation of the conservation measures described in Appendix A and because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities (EA, pgs. 3-88 thru 93).

Activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-96 thru 99).

Overall, the biologists determination of effects for Regional Forester's Sensitive Species under Alternatives 2 and 3 were that the proposed activities may have no effect, a beneficial effect, or impact individuals or sub-populations, but not likely to cause a trend towards federal listing or loss of viability (BA/BE, pgs. 99, 100, 103, 128, and 129). Activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71)

Comment 27G: The information relating to the herbicides proposed for use in this project is located in Appendix C of the EA. Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are Restricted-Use and all applications will follow the legal limits as listed on the regulatory labels.

Comment 27H: The challenge of restoring and providing habitat for the endangered Karner blue butterfly is on-going in the States of New York, Wisconsin, Indiana, and in other locations in Michigan. This work is being done collaboratively with public, private, and non-profit participation.

Comment 27I: We make every attempt to identify potentially interested and affected parties for these projects. To identify issues and develop possible solutions for the Savanna Ecosystem Restoration Project a scoping letter dated December 10, 2009 was mailed to approximately 1,011 interested parties, including county and township officials, businesses, members of the general public, industry, property owners within the Project Area, environmental groups, and tribal representatives. The scoping letter described the existing condition of the resources within the Project Area and outlined the Savanna Ecosystem Restoration Proposed Action. Public involvement for the project also included listing of the project in the Forests' Schedule of Proposed Actions as well as posting the scoping documents on the Forest's website.

In addition, comment signs were placed on the boards leading into the WRSNA on July 22, 2009 promoting public involvement in the upcoming proposed management activities in this area. During the scoping process, we had on-site meetings with individual members of the public and groups to discuss the proposed activities.

We believe that the areas that you refer to in this portion of your comment are the demonstration plots within the WRSNA (in the White River Metapopulation Area), where timber harvest activities have occurred. We are currently conducting savanna restoration treatments on 365 acres within the White River Metapopulation Area under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), and implementing opening restoration treatments to restore occupied KBB sites on 431 acres within the White River and Otto Metapopulation Areas under the Karner Blue Butterfly Habitat Restoration Project (USDA Forest Service 2009c). Under the Savanna/Barrens Restoration Project, the District is conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat. (EA, pg. 3-69) The purpose of these plots is to determine the best methods for creating and restoring the type of savanna habitat that is appropriate for sustaining viable reproducing populations of KBB. The District has developed approximately 104 acres of demonstration plots within the White River Metapopulation Area. Similar demonstration plots would be established within the Otto Metapopulation Area, prior to the implementation of the savanna restoration activities that are included in this project. By applying what it learns from small scale demonstration projects and effectiveness monitoring at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective. (EA, pgs. 3-54 and 3-64).

Your name will be added to the mailing lists that you have requested.
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Commenter 28: Ed Fisher
Response:
Comment 28A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

Comment 28B: The number of campsites within the Project Area is described in the EA by location (the White River or Otto) and by campsite size (small, medium, large, or extra large). Both the White River and Otto areas each have approximately 38 campsites. Both Alternatives 2 and 3 propose to reduce campsites in the White River area from 38 to 11. No changes to the number of sites in the Otto portion of the Project Area are proposed.

Table 3.34 (EA, pg. 3-141) and Table 3.36 (EA, pg. 3-153) each show the existing area of impact related to the dispersed camping areas within the White River Area to be 9.1 acres and the existing area within the Otto Area to be 4.7 acres. These values are consistent with the other values presented in the EA, with the exception of one location. The values were rounded off to 9.0 acres for the White River Area and 5.0 acres on page 3-130. We apologize for any confusion this rounding off of values may have caused.

Comment 28C: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The information relating to the herbicides proposed for use in this project is located in Appendix C of the EA. Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are Restricted-Use and all applications will follow the legal limits as listed on the regulatory labels.

The cost that is included on *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209), was estimated based on the current rates that contractors use when bidding on similar types of projects and includes both the labor and materials. Please note that the estimated cost for herbicide in the document was an error which has been corrected and should read $122,400 for both woody and non-woody vegetation (see Errata Sheet). This correction will be noted in the final version of the document.

Comment 28D: The creation or restoration of the savanna and prairie ecosystem type is not a one step process. The number and type of steps that are required depend on a variety of factors. These include: the amount of trees currently occupying a site, the amount of topsoil that was lost prior to reforestation, the amount and type of seed in the seedbank, the vegetative type of the surrounding areas, and more. The projects conducted in the Newaygo area served as the first step in the successful re-establishment of prairie in this area. Much has been learned through these projects relating to the contributions that can be expected from the existing seedbank, the need to protect the restoration from woody encroachment, the quantity of restoration that is reasonable in an area at a given time, and the important roles that site-specific monitoring plays in executing the adaptive management approach. The restoration work in Newaygo is not completed and is included as an upcoming project. The Newaygo area was discussed in the EA (pg. 3-39):

> *"Efforts are being made to restore savanna in other portions of the State as well. The Forest has initiated savanna restoration in the M37 Project Area and in portions of the Mast Lake Project Area, both in Newaygo County. The Forest also undertook an experimental restoration of pine plantation to dry sand prairie habitat in the Newaygo Experimental Forest. That project has not continued to completion at this point in time, as encroachment of red pine and other factors are contributing to delay in successfully attaining a restoration in the area. Some restoration on non-Forest lands is also occurring through support from The Nature Conservancy."*

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Commenter 29: Linda Fisher

Response:

Comment 29A: The Savanna Ecosystem Restoration Project does not propose to clear cut 26,000 acres. The entire Project Area is approximately 26,000 acres: including both National Forest System lands (15,000 acres) and private lands (11,000 acres). The activities proposed by this project are limited to a portion of the National Forest System lands and would occur on approximately 2,950 acres (~19.7% of National Forest System lands within the Project Area) over the next ten years. The larger Project Area boundary is used in the discussion of the environmental effects associated with the proposed activities.

The specific activities related to timber harvesting include:

> *"Savanna creation …on approximately 2,950 acres over the next ten years using a combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicide using ground-based application tools …Of the 2,950 acres, approximately 2,315 acres are currently considered forested. These include approximately 1,491 acres of black oak, 320 acres of oak/aspen mix, 249 acres of red pine/oak mix, 106 acres of aspen, 71 acres of red pine, 26 acres of white oak, 24 acres of mixed oak, 19 acres of Scots pine, and 9 acres of jack pine."* (EA, pg. 1-10)

In addition, there would be approximately 735 acres of red pine thinning and 49 acres of oak/aspen regeneration to increase productivity and maintain vegetative diversity throughout the Project Area (EA, pgs. 1-11 and 12).

Comment 29B: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would follow the regulatory amounts permitted under the regulations of the U.S. Environmental Protection Agency as deemed safe for humans and the environment and as indicated on the regulatory limits as prescribed on the pesticide product labels. No safety limits will be exceeded related to the use of herbicide in any action of this project. Application would only be permitted in two different circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual stump sprouts (i.e., oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur (~360 acres).

These circumstances were described in the EA:

> *"42 acres of non-native invasive plant control by mechanical or manual removal and/or herbicide. Additionally, treatment of up to 10% of savanna creation and existing openings acreage may need treatment to reduce competition between native plants and non-native invasive species."* (EA, pg. 2-4)
>
> "*Herbicides (see Appendix C) using ground-based application methods at recommended label rates to suppress oak and cherry sprouting, carex, and bracken fern, would be used to supplement mechanical, hand tool, and broadcast/pile burning treatments to attain the desired canopy conditions.*" (EA, pg. 3-10)
>
> "*Undesired sprout includes the herbicide stump treatment of trees, especially oaks, cut to open up canopy cover and restore/create savanna habitat for Karner blue butterfly. In cases where timber cuts and burns are not sufficient to remove individual trees, stump application may be applied.*" (EA, pg. 3-25)

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of the EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness.

Comment 29C: The costs and revenues (by alternative) for the implementation of this project are listed on Table 3.44 (EA, pg. 3-206) and Table 3.45 (EA, pg. 3-209). It should be noted, upon review of the Environmental Assessment, we identified an error in *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209) (see the Draft EA Errata Sheet). In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3. No changes are necessary for *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (EA, pg. 3-206).

Comment 29D: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

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Commenter 30: George Fitzgerald

Response:

Comment 30A: We acknowledge your opposition to our past and present actions and the Savanna Ecosystem Restoration Project.

Comment 30B: We acknowledge your past recreational use of public land for motorized recreation.

Comment 30C: The implementation of the activities associated with this project would serve to create ~~the~~ opportunities for jobs in the area. This is discussed in the EA (pg. 3-211):

> *"Under Alternatives 2 and 3, there would be additional employment opportunities associated with timber harvesting activities and the creation and restoration of the savanna ecosystem. Employment opportunities would likely be in the form of contractors and seasonal and permanent staff. Included would be such activities as: timber sale layout and administration, timber harvesting, timber stand site preparation, regeneration surveys, savanna site preparation, NNIS/savanna herbicide application, seeding and planting, road and parking lot construction and maintenance, and wildlife surveys. Further contributions to the economy would occur through the purchasing of materials and supplies necessary to accomplish the work. These activities would occur over a period of up to 10 years and, when compared with the economy of Northern Lower Michigan, would have little to no impact on the prevailing conditions."*

Comment 30D: There are no specific activities proposed in this project for the Indiana bat. Under all of the alternatives associated with this project, hunting, recreation, fishing, and camping would continue to be allowed throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

The majority of U.S. Forest Service roads that would be closed are within the WRSNA. The road system is a combination of jurisdictions; U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status, open or closed, would not be changed by the activities proposed in the Savanna Ecosystem Restoration project. In addition, motorized access to North, South, and Main Branches of the White River would continue to be provided by both U.S. Forest Service and county roads for recreational activities (i.e. hunting, fishing, canoeing) in areas outside of the WRSNA, in accordance with the Motor Vehicle Use Map (see Map 3.8 on page 3-154 of the EA).

Comment 30E: The creation/restoration of the savanna ecosystem type for this project is directly related to the presence of the Karner blue butterfly. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. The Project Area includes the White River and Otto Metapopulation areas, as identified in the Karner Blue Butterfly Recovery Plan. The Purpose and Need for this project states:

> *"Manage permanent openings and/or grasslands to meet species viability needs (Forest Plan). Maintain existing habitat and restore suitable habitats by converting forested stands into savanna for the KBB in the Muskegon Recovery Unit. Maintain sufficient habitat to meet the recovery goals for viable KBB populations within the Otto and White River Metapopulation Areas. Continue savanna/barrens restoration projects within the Muskegon Recovery Unit with emphasis on connectivity between KBB subpopulations, expansion of existing sites, and enhancing attributes within sites (USDI 2003)."*

The sites that are proposed for habitat creation/restoration are based on KBB survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be

targeted for management activities first. While the activities associated with savanna restoration and creation could occur in areas outside of this Project Area, the presence of the Karner blue butterfly in this area make it an area of high priority for this type of treatment activity.

Comment 30F: By "survey", we assume you are referring to the Savanna Ecosystem Restoration Project scoping letter. The purpose of scoping is discussed in the EA (pg. 1-12):

> *"Scoping is a process that is used to gather comments about a site-specific proposed federal action to determine the scope of issues to be addressed and for identifying unresolved issues related to the proposed action (40 CFR 1501.7). The Forest Service uses public involvement and an IDT* (Interdisciplinary Team) *of resource specialists to determine the issues of concern and develop possible solutions. Opportunities for comments enable concerned citizens, resource specialists from other agencies, and local governments to express their ideas and viewpoints."*

Scoping letter recipients include landowners adjacent to the proposed activities (permanent or absentee), those who request to be on the District or Forest mailing lists, those who express interest in a specific project, the Tribes, and agencies or organizations who would likely have an interest in a particular project. National Forests were established (and remain) for all citizens of the United States of America. Therefore, all citizens are entitled to submit comments to scoping letters and these comments are weighted equally, regardless of the number or the location from which they are submitted.

Comment 30G: We acknowledge the areas that you travel.

Comment 30H: The actions associated with this project were found to be non-discriminatory, per the analysis relating to Environmental Justice (EA, pgs. 3-216 and 217). Rifle deer hunting, fishing, small game hunting, bow hunting, and wild food gathering would continue to be allowed on National Forest System lands throughout the entire Project Area in accordance with the applicable state and federal laws.

We acknowledge that the management of the transportation system in this area has caused changes in the historical recreational use. Under Alternatives 2 and 3, continued change in this use would be likely. This is identified in the EA (pg. 3-202):

> *"Within this Project Area, the existing Forest Service road system plays an important role in how people have historically and currently utilize the National Forest. Alternatives 2 and 3 would change this use through implementing changes to this system. With this change, there would be social impacts. The social aspects would be related primarily to the reduction in motorized access to the WRSNA. This would impact not only those who historically and currently have used this area for motorized-dependent recreation (i.e. dispersed camping, driving for pleasure, etc.), but also those who have utilized adjacent areas. It would be anticipated that as a result of Alternatives 2 and 3, there would be an increase in this type of use in the adjacent areas by those who are displaced from the WRSNA. Many of the visitors that currently use this area and prefer or require motorized recreation would be likely to move to other locations if the roads closed under these alternatives impact the areas where they have traditionally recreated. These areas are provided in many of the other Management Areas that are part of the HMNF."*

Comment 30I: All citizens of the United States of America are entitled to submit comments to projects on National Forest System lands. As managers of the public's land, we are charged with ensuring that anyone who may be effected by or be concerned with a proposed action has the opportunity to provide input. Each comment received is considered, and addressed without bias and without regard to where it originated.

Comment 30J: We acknowledge the rights of the community within the Project Area to litigate**.**
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Commenter 31: Julie Fitzgerald
Response:
Comment 31A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

Comment 31B: The following excerpts explain the causes for the listing of Karner blue butterfly as Endangered. The first is from the Karner Blue Butterfly Recovery Plan (2003), which discusses this as it relates at a national level. The second is from the EA, which discusses this as it pertains to the four metapopulations that exist within the boundaries of the Huron-Manistee National Forests.

1) *"…the most significant threat to the Karner blue range wide is habitat loss, alteration, and destruction. Habitat loss has resulted in a reduction in the number of Karner blue subpopulations, habitat fragmentation, and smaller-sized occupied sites. Habitat alteration has reduced the abundance and quality of the Karner blue's food resources (lupine and nectar plants) and subhabitat diversity. Non-management of habitat has resulted in habitat loss over time due to ecological succession. Loss to commercial, industrial, and residential development is more a threat in areas where Karner blue populations are in close proximity to cities or desirable recreational lands…*

   The major threat to native habitats is conversion to alternate uses, such as agriculture, forestry, industrial, residential and commercial development, and road construction. Originally, barrens and savanna were widespread in the central United States but rare in the eastern United States. In both regions, there has been a precipitous decline in these habitats. Remaining barrens and savanna usually consist of isolated patches that persist because of droughty soils, insects and disease, and human disturbance such as mowing, light grazing, and intermittent prescribed or wild fires." (KBB Recovery Plan, pg. 38)

2) *"The Forest believes that the following factors might be responsible for apparent KBB declines in the four metapopulation areas (USDA Forest Service 2006a, USDA Forest Service 2009a):*

   • Habitat loss due to natural succession is continuing at the same level, despite past treatments that have attempted to prevent woody encroachment into suitable KBB habitat. The number of acres of suitable KBB habitat experiencing woody encroachment is greater than the number of acres of suitable KBB habitat treated annually.
   • Deer browsing of wild lupine, which might reduce KBB larval survival, is increasing within suitable KBB habitat.
   • Weather conditions have shifted between drought conditions and very wet and cold springs and summers, with several spring frosts. As a result, availability of wild lupine and other

important nectar plants has decreased within suitable KBB habitat. In addition, these conditions likely decreased over-winter survival of KBB eggs.
• Topography of these units, with low depressional areas, increases the occurrence of growing-season frost pockets that might damage wild lupine and other nectar plants.
• Vehicle/ORV use and dispersed camping occurs within suitable KBB habitat and might kill KBB and/or damage wild lupine and other important nectar plants. Road closures implemented under the Forest Plan's management direction for the White River Semiprimitive Nonmmotorized Area, and camp site closures in occupied KBB habitat that have been implemented under Forest Plan Standards and Guidelines have reduced these impacts in some metapopulation areas (USDA Forest Service 2006b). (EA, pg. 3-53)

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The management activities proposed under Alternatives 2 and 3 are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71)

Comment 31C: We acknowledge your past use of the roads and trails within the Project Area. The majority of Forest roads that would be closed with this project occur within the White River Semiprimitive Nonmotorized Area (WRSNA). The existing road system in this area includes a combination of jurisdictions; both U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status would not be impacted by the activities proposed under this project. The closures are proposed to move towards the Desired Future Condition of managing this area to provide opportunities for semi-primitive non-motorized recreation. However, motorized access will continue via the county road system.

Comment 31D: These requests for information were responded to, per the regulations of the Freedom of Information Act.

Comment 31E: The socio-economics of Oceana County were considered in the Environmental Justice section of the EA (pgs. 3-216 and 217):

> *"Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups should bear disproportionately high and adverse human health or environmental effects resulting from Federal agency programs, policies, and activities. Environmental justice is also the identification of projects that are located near minority and low-income communities that have an adverse environmental impact."*

Demographic information was presented for Oceana and Muskegon Counties (as they compare with the State of Michigan) in *Table 3.46: Demographic Trends within the Area of Analysis.* Based on this comparison "*…none of the alternatives would affect environmental justice within Oceana or Muskegon Counties."* (EA, pg. 3-217)

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Commenter 32: Arlene Frodey
Response:
Comment 32A: We acknowledge your support for the Savanna Ecosystem Restoration Project.
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Commenter 33: Ronald Gafford
Response:
Comment 33A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project. Under all of the alternatives associated with this project, hunting and fishing, as well as other recreational activities, would continue to be allowed throughout the Project Area. The majority of Forest roads that would be closed with this project occur within the White River Semiprimitive Nonmotorized Area (WRSNA). The existing road system in this area includes a combination of jurisdiction; both U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status would not be impacted by the activities proposed under this project. In addition, motorized access to North, South, and Main Branches of the White River would continue to be provided by both Forest and county roads for recreational activities (i.e. hunting, fishing, canoeing) in areas outside of the WRSNA, in accordance with the Motor Vehicle Use Map (see Map 3.8 on page 3-154 of the EA).
++++++++++
Commenter 34: Marjorie Glide
Response:
Comment 34A: The effects that this project would have on the wildlife species within the Project Area was considered (by habitat type) in the EA (pgs. 3-77 thru 103). While consideration is given to all species that may occupy project-level locations and their habitat requirements, those species that are endangered take precedence (per the Endangered Species Act). Being "squeezed into smaller and smaller areas" (as you indicate) is referred to as "habitat fragmentation" and is considered to be one of the primary causes for the listing of the KBB. This is referenced on page 38 the KBB Recovery Plan (USDI, 2003):

> *"…the most significant threat to the Karner blue range wide is habitat loss, alteration, and destruction. Habitat loss has resulted in a reduction in the number of Karner blue subpopulations, habitat fragmentation, and smaller-sized occupied sites. Habitat alteration has reduced the abundance and quality of the Karner blue's food resources (lupine and nectar plants) and subhabitat diversity. Non-management of habitat has resulted in habitat loss over time due to ecological succession. Loss to commercial, industrial, and residential development is more a threat in areas where Karner blue populations are in close proximity to cities or desirable recreational lands…"*

While the management activities that are proposed under Alternatives 2 and 3 might impact wildlife within the Project Area, the biologists determined that the project would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129).

"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean

warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area" (EA, pg. 3-91).

In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

The U.S. Forest Service considers The Nature Conservancy an important partner in the management of KBB, primarily where sites that are occupied with KBB occur on lands where National Forest System lands share a boundary with private lands. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The Savanna Ecosystem Restoration (SER) Project Area includes the Otto and White River Metapopulation Areas, for which the USFWS identified the following recovery goals (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB):

1. Large viable metapopulations (≥ 6,000 first or second brood adults).
2. Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3. Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4. Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers.

The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established. Creating or restoring a prairie from existing farmland will not meet the needs of the KBB, if there are no KBB populations within dispersal distance, and suitable habitat cannot be developed on those lands to meet the quantity, quality, and distribution requirements needed to sustain a viable metapoulation.

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Commenter 35: Robert Gould

Response:

Comment 35A: We acknowledge your support of the improving KBB habitat and your opposition to the closing of roads within the Project Area. While Alternatives 2 and 3 of this project would limit motorized access on the U.S. Forest Service roads within the White River Semiprimitive Nonmotorized Area (WRSNA), there would continue to be motorized access to the river in other portions of the Project Area and at locations that are on the opposite bank of the river, outside the Project Area. These locations are identified on Map 3.8 of the EA (pg. 3-154). There would also be continued motorized access within the WRSNA the county road

system. These roads are under the jurisdiction of the Oceana County Road Commission and their status, open or closed, would not be changed by this project.

In addition to Pines Point, carry-in boat launches are also located at Diamond Point, Sischo Bayou, and Podunk for access to portions of the river that are within the Project Area. These sites are accessible on the south bank of the river. Other access sites, outside of the Project Area, include the M-20 Rest Area, Hesperia, Taylor Bridge, Happy Mohawk, and numerous non-designated sites found at road ends. Under Alternatives 2 and 3, a parking area would be established at the east end of Winston Road. The South Branch of the White River would be accessible a short distance from this site and the access would be considered "walk-in". Access to the North Branch of the White River from the west side of the Project Area would remain unchanged from what currently exists, per the open road system that is identified on the Manistee National Forest's Motor Vehicle-Use Map (MVUM).

Comment 35B: The management of dispersed camping sites along the Baldwin, Pere Marquette, Pine, and Little Manistee Rivers is beyond the scope of this project; however, the Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan) (2006) gives Forest wide direction for camping near water in the Guideline: *"Do not permit camping inside a zone extending 200 feet back from the water's edge of any lake or river except at designated sites."*

This would likely apply to some of the dispersed sites along the rivers that you refer to. Other causes for the closure of areas may include: resource damage (i.e. erosion), sites occurring on undesignated Forest Roads (not on the Motor-Vehicle Use Map), or as a result of site-specific project planning.

Comment 35C: The history of vegetative change on the Huron-Manistee National Forests is considered in the Savanna Ecosystem Restoration Environmental Assessment (EA) and in the Final Environmental Impact Statement (FEIS) for the 2006 Huron-Manistee National Forests Land and Resource Management Plan. According to the EA:

> *"Historically, approximately 10 percent (or 60,000 acres) of the Manistee National Forest was made up of some type of savanna system (HMNF Programmatic Biological Evaluation 2005). Fire was the major disturbance factor influencing the creation and maintenance of these systems, with the most open areas likely burning in successive years (Corner pers. comm. 2003c.f.; USDA Forest Service 2005). In an unaltered condition, savannas support a diverse flora including numerous species that are characteristic of dry prairies. A number of plant and animal species were reduced in frequency of occurrence and density as these communities became closed canopy forests (VandeWater 2004). The savanna ecosystem is now considered rare throughout its historic range in Michigan, with the majority having either been destroyed through land conversion or altered as a result of plant succession (Chapman, et al. 1995)."* (EA, pg. 3-18)

According to the FEIS, in the mid-1800s:

> *"The entire area was not covered by a continuous forest, even though most early explorers describe it that way. Unstable, scattered dunes bordered Lake Michigan (Santer 1977), and the interior contained openings created by fire, insect, disease and windthrow. Some areas along the southern boundary of the Manistee National Forest contained open prairie. The majority of the*

> *mid-1800s timber stands were old growth. Wildlife species associated with old growth flourished. Many large cavity or snag trees, woody ground debris and an understory structure associated with old growth were features which dominated most stands. Wildlife species associated with the early successionalcommunities were present in small numbers."* (FEIS, pg. 3-38)

According to the EA, from the mid-1800s to the mid-1900s:

> *"The northern Lower Peninsula area was drastically altered between 1840 and 1938. The old growth timber had been harvested, and post-logging fires had killed many second growth stands. About one-third of the area was now open. Farming had been tried, but farms failed in most areas because of sandy soil conditions. Early successionalvegetative types covered most of the area. Aspen, jack pine, birch and other short-lived species were common. Many of the areas which once had been dominated by mature northern hardwoods now contained young stands of the same type. Much of the area previously covered by the pine and oak/pine types had been so damaged by post-logging fires that only open sand blows and scattered trees remained. Many of these areas were planted to jack and red pine soon after the National Forests were established. Fire prevention, which followed the establishment of the National Forests, was an essential element in shaping today's Forests."* (EA, pg. 3-39)

According to the EA, from the mid-1900s to present:

> *"The vegetation found on the Huron-Manistee National Forests today, to a large degree, is the result of the fire control efforts and the extensive reforestation program carried out between 1920 and 1960. Many of the open areas were planted to red, white and jack pine. These trees, and the young stands that existed when the Forests were established, are maturing and provide a variety of timber products. The present mixture of vegetative types and age classes provides diverse habitats for a variety of wildlife species."* (EA, pg. 3-40)

Comment 35D: We acknowledge that there would be a change in where and how some current recreational activities occur in portions of the Project Area under Alternatives 2 and 3. Under Alternative 1, there would be no changes. Under Alternatives 2 and 3, it is anticipated that the recreational use within the WRSNA will shift away from a reliance on motorized equipment to reach an area to begin a recreational activity to more self-reliance. For example, hunting would continue but instead of driving to an area and parking a vehicle you would hike to that location.

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Commenter 36: Jerry Grady

Response:

Comment 36A: We acknowledge your support for the KBB habitat improvement activities associated with the Savanna Ecosystem Restoration Project.

Comment 36B: We acknowledge your comment on the public involvement for, and the public's perception of, this project. For most projects being proposed on National Forest System lands, public involvement begins with a scoping letter. For this project, public involvement began prior to the scoping letter, with informational signs being placed on the bulletin boards leading into the White River Semiprimitive Nonmotorized Area (WRSNA) on July 22, 2009. The intent was to promote public involvement early in the planning of proposed management activities in area. In addition, U.S. Forest Service staff went throughout the Project Area in the fall of 2009 to

discuss the upcoming project with Forest users and to place informational flyers on parked vehicles.

A scoping notice was placed in the Oceana Herald Journal when formal scoping began. Also, the Grand Rapids Press ran an article on the proposed project. During scoping, we met with individual members of the public and groups to discuss the proposed activities and gather comments. These efforts to identify the issues and concerns related to the project went beyond what is typical for most projects. It shows the level of commitment the U.S. Forest Service has to ensuring that our planning process is open and fair and does the best to address the issues raised during scoping and to analyze the effects of the proposed actions. Even given all of these efforts to engage the public, some are missed. Others disagree with the outcome of the planning process, i.e. they don't like the preferred alternative, and seek out support from others for their position. To gain support, misleading and gross generalizations are used to illicit an emotional response from others versus one based on the merits of the project and the extensive information presented in the environmental assessment.

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Commenter: Scott Greiner

Response:

Comment 37A: Under all of the alternatives-analyzed in the Savanna Ecosystem Restoration Environmental Assessment, hunting, fishing, hiking, snowmobiling, and other recreational uses would continue. Under Alternatives 2 and 3, there would be changes to the-transportation system currently providing motorized access throughout the Project Area. The majority of these changes would occur in the White River Semiprimitive Nonmotorized Area (WRSNA). These changes are shown in Table 3.40 of the EA (pgs. 3-185 and 186). Closing the U.S. Forest Service roads within the WRSNA has been included in this project because it addresses a Purpose and Need for the project; management of the area as Semiprimitive Nonmotorized (EA, pgs. 1-6 and 7). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). There would be no changes to the county roads in the WRSNA as a result of this project. These roads will continue to provide motorized access.

The necessity for the proposed closures is discussed in the EA. As stated (pg. 1-8): "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*" The need for the road closures in this area is also identified in the EA (pg. 1-9): "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*"

Comment 37B: We acknowledge your request to utilize already existing open areas in other parts of the forest for the activities associated with habitat creation/restoration for the KBB. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The Savanna Ecosystem Restoration (SER) Project Area includes the Otto and White River Metapopulation Areas, for which the USFWS identified the following recovery goals:

1. Large viable metapopulations (≥ 6,000 first or second brood adults).

2. Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3. Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4. Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The sites that are proposed for habitat creation/restoration are based on the existing populations of KBB and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. For the Manistee National Forest, these areas are described in the EA (pg. 2):

> *"The Savanna Ecosystem Restoration (SER) Project Area is within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (see Figure 1.1). The recovery goal in the Muskegon RU is the development of two large viable metapopulations of KBB; each containing 6,000 butterflies. The location of these metapopulation areas is based on the overlap of historic savanna habitat and historic KBB populations. On National Forest System lands within the Muskegon RU, the Otto and White River Metapopulation Areas were identified. These two areas are the focus of the proposed Forest Service management activities for KBB in the Savanna Ecosystem Restoration project; a project with the primary objective of establishing and maintaining suitable habitat that will support two large viable metapopulations in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004)."*

Other locations outside of these core areas could then be considered, once the corridors for dispersal were established.

Comment 37C: The management of motorized access in areas on National Forest System lands outside of the Savanna Ecosystem Restoration Project is beyond the scope of this project; however, there are a variety of reasons that roads may be closed. These include, but are not limited to: resource damage (i.e. erosion), the roads are not designated system roads (not on the Motor-Vehicle Use Map), or as a result of site-specific project planning (in which the management of the transportation system is an element). While motorized access may be limited in some areas, the lands are still open for the public to use and enjoy. The transportation system in the Crystal Valley area was analyzed as part of the Crystal Valley Environmental Assessment (2004).

Comment 37D: We acknowledge your concerns with the effects that this project may have on the economy. The economic effects relating to this project were considered on pages 3-205 thru 3-212 of the EA. Specifically, the direct and indirect effects to recreational use within the Project Area were considered on pages 3-205 and 206.

"The closing of roads within the SPNMA would cause a shift in the type of recreational use within this area. The majority of existing use in this area is dependent on motorized vehicle access, either directly (i.e. driving for pleasure) or indirectly (i.e. the hauling of campers or horse rigs). Limiting the motorized access in this area to the existing county roads would change the recreational experience in this area. As a result, some of the existing motorized-dependent users would likely make a choice to go to other locations both inside and outside of the Project Area."

In the short-term, this shift would likely have minor economic impacts for those that are immediately adjacent to the Project Area; however, these impacts would not be likely to extend beyond the boundaries of this analysis (50 mile radius). These impacts would be more pronounced under Alternative 3, as horse use would be limited to areas outside of the SPNMA. Again, this use would also be likely to shift to other locations of the Forest and be unlikely to have major economic impacts that would extend beyond the analysis boundary.

In other areas throughout the Project Area, the short-term recreation use on the Forest would be displaced during harvesting operations and periodically thereafter during the follow-up restoration treatments. This displacement would not have lasting economic impacts within the analysis boundary, as users would likely move to other adjacent areas on the Forest during the period of displacement."

The cumulative effects to the economy were considered on page 3-212:

"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."

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Commenter: Arthur Griswold

Response:

Comment 38A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

Comment 38B: The purpose and need for the proposed road closures in the White River portion of the Project Area is discussed in the Environmental Assessment (EA):

"*Management activities in these areas provide semiprimitive, nonmotorized recreational experiences...".* (pg. 1-6)

"*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring."* (pg. 1-8)

The need for the road closures in this area is also identified in the EA (pg. 1-9):

"Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience."

Under all of the alternatives analyzed in this project, hunting, fishing, hiking, snowmobiling, and other recreational uses would continue to be allowed. There would be no restrictions on horseback riding on National Forest System lands within the Project Area under Alternative 1. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated under Alternative 3. There would be no restrictions on horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Under Alternatives 2 and 3, there would be changes to the transportation system currently providing motorized access throughout the Project Area. The majority of these changes would occur within the WRSNA. The proposed changes are shown in Table 3.40 of the EA (pgs. 3-185 and 186). There would be no changes to the county roads in the WRSNA as a result of this project, as these roads are under the jurisdiction of the Oceana County Road Commission. While access using the existing U.S. Forest Service road system would change under these alternatives, some level of motorized access would be maintained utilizing the county road system. This would provide a reduced level of vehicular access into the area, for those who require this as part of their recreational experience.

Therefore, the closing of Forest Service roads within the WRSNA has been included as an action in this project because of the designation of this area as a Semiprimitive Nonmotorized Area through the Forest Plan. These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine).

38C: We acknowledge the need to manage horse use within the Project Area. A proposal to manage this use is included in both Alternative 2 and Alternative 3 of the project within the WRSNA portion of the Project Area.

Alternative 2 would designate/construct ~19.7 miles of non-motorized trail within the WRSNA that would accommodate horseback riding. It would allow for the watering of horses using buckets at identified permanent water sources on National Forest System lands and require the removal of horse manure and unused feed and hay from designated parking and camping areas within the WRSNA. (EA, pg. 2-3)

Under Alternative 3, there would be no designated non-motorized trail in the WRSNA. A Forest Supervisor's closure order would prohibit horses in the WRSNA and limit motorized camping to designated sites. (EA, pg. 2-3)

No changes in the management of horse use would occur under Alternative 1, the No Action Alternative. Also, there are no actions proposed to manage horse use outside of the WRSNA by the Savanna Ecosystem Restoration project.

Comment 38D: We acknowledge your concerns about prescribed burning. The effects related to prescribed burning on early successional species (such as deer) are considered in the EA. The following refers to the effects that may occur during the actual burn operations:

> *"Breeding birds, small mammals, and less mobile species, such as reptiles and invertebrates, are most likely to be directly affected in these operations due to the use of heavy equipment and the activities associated with prescribed burning. Operations during the breeding season would have the potential to cause disturbance, destroy or damage nests and dens, or kill/injure small young and less mobile species."* (EA, pg. 3-79)

> *"….prescribed burning, proposed under Alternatives 2 and 3, may kill or temporarily displace small numbers of dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types within the Project Area."* (EA, pg. 3-78)

> *"While eastern box turtles and some adult stages of dusted skipper, frosted elfin, and hill-prairie spittlebug may be able to move out of treated areas, the eggs and larvae of these species are immobile and thus are particularly vulnerable and likely to be …….. burned during prescribed burning…."* (EA, pg. 3-78)

The following is specific to the effects on deer populations within the Project Area over time:

> *"Under Alternatives 2 and 3, savanna creation and KBB opening restoration also may improve habitat for herbivores occurring within the Project Area. In particular, deer may experience an increase in habitat quantity and quality, potentially causing localized increases in deer numbers and increased herbivory on wild lupine and other nectar plants within savanna creation and KBB opening restoration areas."* (EA, pg. 3-81)

Although the management activities proposed under Alternatives 2 and 3, including prescribed burning, may have adverse and beneficial direct and indirect effects on wildlife associated with early successional habitats (EA, pages 3-78 through 3-85), the biologist concluded the activities would not cause a trend towards federal listing or loss of viability for wildlife species within the Project Area (BA/BE, pgs. 99 and 100).

The same types of effects (short-term loss for long-term gain) apply when considering the effects of prescribed burn efforts on the Karner blue butterfly. The following excerpt for the KBB Recovery Plan (USDI, 2003) describes this:

> *"When using fire as a management tool, it is important to recognize the balance between Karner blue (and other insect) mortality in the short-term, and improvement in the quality of their savanna/barren habitats in the long-term (Givnish et al. 1988, Andow et al. 1994, Maxwell and Givnish 1996, Swengel and Swengel 1997, Schultz and Crone 1998). In addition, the use of prescribed burn for habitat restoration will require different considerations than when fire is used for habitat maintenance. Some of the key factors to consider in developing habitat restoration and maintenance plans that include prescribed fire as a tool are: 1) site history and current condition, 2) amount of direct Karner blue mortality likely to occur during the fire, 3) potential for Karner blues to reoccupy the site, 4) characteristics of prescribed fire, 5) response of lupine and nectar plants to fire, and 6) other habitat responses."* (pgs. 35 and 36)

Although management activities under Alternatives 2 and 3, including prescribed burning, may adversely affect the Karner blue butterfly in the short-term, the biologist concluded (EA, pgs. 3-56 thru 3-68), in the long-term, KBB opening restoration and savanna creation are expected to

have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (EA, pg. 3-64; BA/BE, pgs. 58 and 71).

Comment 38E: We acknowledge your concern over access to the Project Area for the control of wildfires. The issue of wildfire was considered and analyzed in the EA, specifically:

> *"In Alternative 1, the forest would be unmanaged and there would be a slow succession to a closed canopy forest in this area. This would lead to an accumulation of dead and down standing wood, as well as an increase in ladder fuels, thus making the area susceptible to catastrophic stand replacing wildfires.*
>
> *Alternatives 2 and 3 would move the area to a more open vegetative state that would allow easier access for future fire suppression if required. There would also be less likelihood of a catastrophic wildfire."* (pg. 3-122)

Comment 38F: Closure of 152nd at Knutson Creek by the Oceana County Road Commission occurred after the U.S. Forest Service had completed the Savanna Ecosystem Restoration Environmental Assessment and began the 30-day public comment process. We acknowledge the access needs of those that live on the east side of the North Branch of the White River. To provide reasonable access for landowners FR5317 will be opened and will remain open until the crossing at 152nd is reopened by the Road Commission.

Comment 38G: Alternatives 2 and 3 would limit motorized access on the U.S. Forest Service road system in the WRSNA. However, there would continue to be vehicle access to the river in other portions of the Project Area and at locations on the opposite bank of the river, outside the Project Area. These locations are identified on *Map 3.8: Existing Recreation Sites within the Project Area* on page 3-154 of the EA. Also, motorized access within the WRSNAwould continue to be provided on the existing county road system. These roads are under the jurisdiction of the Oceana County Road Commission and their status, either open or closed, would not be affected by this project.

Comment 38H: We acknowledge the need to ensure that adequate regeneration, either naturally or by planting, occurs in areas where timber harvesting activities occur. This is a requirement for areas that are a part of the commercial timber base. Areas where savanna creation would occur in forested stands would be dropped from the commercial base. This is because we want to manage the stands at a less than fully stocked level to meet the purpose and need of this project; habitat restoration for the endangered Karner blue butterfly. Management for savanna does not preclude the option of restoring these areas to fully stocked timber stands in the future.

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Commenter: Ellen Sue Hamburger

Response:

Comment 39A: We acknowledge your support of the Savanna Ecosystem Restoration Project.

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Commenter: Thomas Hennig
Response:
Comment 40A: We acknowledge your support for Alternative 1.

Comment 40B: We acknowledge that all of the alternatives under this project are likely to adversely affect the Karner blue butterfly. Under Alternative 1, adverse effects to the species would be related to the gradual loss of habitat throughout the Project Area as a result of taking no action. Under Alternatives 2 and 3, the adverse effects would be related to the implementation of the management activities associated with the creation and restoration of the Karner blue butterfly habitat. These determinations are made in conjunction with the USFWS. According to a letter submitted by John Dingledine (the Acting Field Supervisor for the USFWS in Lansing), dated October 25, 2010:

> *"These activities would be conducted in a manner to benefit the recovery of the endangered Karner blue butterfly (KBB) (lycaeides Melissa samuelis)…..Disturbance from KBB habitat management might displace or kill KBB within the Project Area. KBB have limited mobility and likely would not escape proposed management activities. Eggs and larvae are immobile and thus are particularly vulnerable and likely to be crushed during mechanical treatments, burned during prescribed burning, or trampled during hand-cutting. As such, the proposed action may adversely affect KBB."*

Therefore, the implementation of Alternatives 2 or 3 will result in the "take" of individual KBB within the Project Area in the short-term with the overall improvement of the species habitat requirements in the long-term. Under Alternative 1, there would be less take of individual KBB related to the proposed management activities in the short-term, but an overall loss of suitable habitat in the long-term.

Thus, all three alternatives may affect, and are likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

We acknowledge that there is an economic investment in the activities associated with this project. While the focus of these activities would be to improve the habitat conditions for the KBB, they would also improve habitat conditions for a suite of other species that are also reliant on similar habitat (EA, pg. 3-78). In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of open land

habitats and early successional aspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Through the implementation of similar projects, including those with the M-37 Project Area and demonstration plots within this Project Area, we are in the process of determining the best practices to achieve the desired results for creating and restoring the savanna community type. As identified in the EA (pg. 3-205):

> *"The timber that is within this Project Area that would be harvested under these alternatives would not be likely to produce enough funds to cover the combined cost of doing this analysis and preparing the sale areas (layout, road improvements, timber marking, etc.). Additional funding would be necessary to accomplish the program of work that would be necessary to accomplish the successful restoration of the savanna ecosystem in this area. Due to the adaptive management approach that is used for these activities, the costs associated with these activities are extremely variable. For example, two adjacent areas would likely require different levels of treatments (both in type and scale) to successfully bring the restoration to completion. While prescribed burning alone may be sufficient at one site, an adjacent site may require tree harvesting, tree and stump removal, prescribed burning, and the seeding in of native vegetation. As a result of the differences in these types of treatments, the costs can vary considerably."*

Similar to the revenues that are identified in Table 3.44 of the EA, the costs for related project activities that are identified in Table 3.45 assume uniform treatments across all of areas identified for the proposed activities. In both cases, the values used in these tables are estimates. The actual cost of implementation could be lower based on the activities that are actually necessary to achieve the desired habitat conditions. This is determined through the monitoring of the treatment sites after the initial treatments have occurred.

Comment 40C: We acknowledge your comment on lupine and the need for disturbance. Disturbance may occur in many ways. Disturbance varies by scale (small to large), intensity (light to heavy), duration (short to long time intervals), and type (natural to human-induced). Each of these factors plays a role in how an ecosystem responds to that disturbance and if that disturbance produces the desired effect. The role of disturbance is discussed in the Karner blue butterfly Recovery Plan (USDI, 2003):

> *"Disturbance activities related to building, mowing, and grading activities in rights-of-way possibly can have beneficial effects on lupine and butterflies, but the magnitude and direction of the effects may depend on the scale and timing of the activity."* (pg 35)

> *"The unique ecological conditions created by the xeric sandy soils, drought-like conditions, and frequent fire disturbances produced a suite of species that, because of their specialized adaptations, rarely occur outside of barrens and savanna habitats."* (pg 36)

> *"Remaining barrens and savanna usually consist of isolated patches that persist because of droughty soils, insects and disease, and human disturbance such as mowing, light grazing, and intermittent prescribed or wild fires."* (pg 38)

> *"The management and monitoring system must buffer the metapopulation against adverse disturbances and threats to survival, maintain suitable habitat over time in an appropriate spatial structure, and identify appropriate responses to potential declines in the metapopulation."* (pg 53)
>
> *"Mitigation strategies for all identified adverse disturbances and threats shall be developed and implemented."* (pg 60)

Introducing disturbance into this system is necessary to achieve the Desired Future Condition; however, when and how that disturbance occurs is an important factor in whether there is a positive response. As disturbed areas, roadbeds would serve as potential areas for lupine to colonize; however, successful persistence of the plants in these areas would not be likely with continued use.

Comment 40D: See the response to 7K in the Response to Comments.

Comment 40E: We acknowledge your concern of the effects this may have on Endangered Species (other than KBB and Indiana Bat) that this project may have. Please refer to *Table 3.19: Determination of Effects for Endangered, Threatened, and Sensitive Wildlife Species that Might Occur within the Savanna Ecosystem Restoration Project Area* (EA, pgs. 3-101 thru 103) for the determinations of other species. Other than KBB and Indiana Bat, no other federally listed endangered or threatened species are documented to occur or have suitable habitat within the Project Area (BA/BE, pgs. 4 thru 17). Determinations are not made for species that are not known to occur or have habitat within individual Project Areas.

Comment 40F: See the response to 7M in the Response to Comments.

Comment 40G: Through the work that has been accomplished in the demonstration plots within the WRSNA (and prior restoration efforts made in the Newaygo Experimental Forest) we acknowledge the challenges that exist in converting the existing forested areas into healthy non-forested community types. Our intent is not to begin the restoration of the savanna in all of these areas simultaneously, rather in stages, with the initial areas (i.e. demonstration plots) serving to guide what activities would be appropriate in subsequent areas to achieve the desired results. This adaptive approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another. As the creation and restoration of the savanna community type is progressive, it is not our intent that all of the areas that are included in this project would be complete savannas within the 10 year timeframe that you refer to, rather that these areas would be available for the activities associated with the creation or restoration of savanna, should effectiveness monitoring and the monitoring of the demonstration plots indicate that these actions are appropriate in these areas. If shown to be appropriate, it is anticipated that some level of activity would occur in these areas within the 10 year timeframe.

Comment 40H: See the response to 7Q in the Response to Comments.

Comment 40I: See the response to 7R in the Response to Comments.

Comment 40J: We acknowledge your support of Alternative 1.
++++++++++
Commenter: Christine Hubert
Response:
Comment 41A: Your comment is part of the official Project Record for the Savanna Ecosystem Restoration Project.

Comment 41B: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

Comment 41C: We acknowledge and appreciate your considerable experience riding horses on and off established trail systems, both in Michigan and in other states.

Comment 41D: We acknowledge your concern over losing safe places to ride at an accelerated rate. Currently, the majority of National Forest System lands on the Huron-Manistee National Forests are considered open to horse use, unless posted closed. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1, the No Action Alternative. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Comment 41E: The fees associated with riding horses on other National Forests and the regulations relating to horse use on the Appalachian and North Country National Scenic Hiking Trail is beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 41F: We acknowledge that horseback riding is a recreational use that currently occurs within the Project Area which includes National Forest System lands in a portion of Oceana and Muskegon Counties. The Endangered Species Act applies to all species within the United States. The listing of a species as federally threatened or endangered is the responsibility of the U.S. Fish and Wildlife Service who, in 1992, listed the Karner blue butterfly as endangered because of the decline of the species across its historic range (USDI, 2003). Three alternatives were analyzed for this project and were developed in response to the issues raised by the public and to address the Purpose and Need for the project (EA, pgs. 1-2 thru 1-10). Horse use within the WRSNA was a relevant issue identified by the public. All three alternatives allow continued use of public lands for horseback riding but at different levels.

Comment 41G: We acknowledge your past riding experiences and knowledge of prior use within Project Area.

Comment 41H: Riding in September, October, and early November in Muskegon, Newaygo, and Oceana Counties would not be precluded by the implementation of the Savanna Ecosystem Restoration project. The timing of management activities is necessary for a number of reasons, such as the most effective way to manage a resource. For example, there is a timing restriction related to the harvesting of aspen that limits harvest operations to October 1 to March 31 to promote natural regeneration (EA, pg. A-3).

For management activities occurring in areas that are occupied by endangered species, timing restrictions are often directly related to the life cycle of the species that is or may be present. For this project, there are timing restrictions in areas of potential Indiana bat habitat for timber harvesting, firewood gathering, and prescribed burning (EA, pg. 3-11).

There are also timing restrictions related to occupied or potential Karner blue butterfly habitat for restoration, creation, and maintenance activities (EA, pgs. A-7 and 8). There would be no timing restrictions placed on the recreational use of public lands implemented as part of the Savanna Ecosystem Restoration project. However, there may be times of the year, for example the fall hunting season, when it is necessary to take extra precautions before heading to the woods.

Comment 41I: We acknowledge your interest in guidance for camping within the Project Area. It is very difficult to find a campsite on National Forest System lands that is not along a road. The large open areas in the White River portion of the Project Area have historically been used for camping and have grown larger as areas became denuded and sandy. Over time more and more roads were being created as users pushed further into the "woods". With these roads and new campsites came impacts to occupied Karner blue butterfly habitat and movement away from the desired condition of managing the White River as Semiprimitive Nonmotorized.

The 2006 Huron-Manistee National Forests Plan provides the framework within which a proposed action for the management of public lands is developed and analyzed. More specifically the Management Area direction and standards and guidelines are used to develop the purpose and need for a project. For the Savanna Ecosystem Restoration Project the following Forest Plan direction was used in the development of the proposed actions for camping in the WRSNA:

> *Do not permit motorized vehicles in essential habitats for endangered, threatened and sensitive species. (Guideline) (Forest Plan, pg. II-13)*

Specific guidance for camping within the WRSNA includes:

> *11 White River*
>
> *a. Camping areas and sites will be designated. Sites and areas will avoid Karner blue butterfly habitat. (Standard)*
>
> *b. Allow dispersed camping at existing sites along open roads. Evaluate opportunities to phase out of these existing sites and develop sites adjacent to the area. (Guideline) (Forest Plan, pg. III-6.1-6)*

Alternatives 2 and 3 utilized this Forest Plan direction to develop proposed actions that address the public's desire for camping in the Semiprimitive Nonmotorized area while protecting Karner blue butterfly habitat.

Comment 41J: Knapp Lake is a coastal plain marsh. The water level of the lake varies over time due to seasonal fluctuations in the depth of the water table and annual precipitation. There are no activities in this project associated with digging out or modifying Knapp Lake.

Comment 41K: We acknowledge your efforts in the early 1990's to map all of the trails in Greenwood and Otto Township, including areas within this Project Area.

Comment 41L: The study you are referring to was cited in the EA:

> *Overall, the trend for outdoor recreation indicates a continued growth in the demand for opportunities, facilities, and services (Cordell 1999). According to the report by Cordell (1999), the five fastest growing outdoor recreation activities through the year 2050 (measured in activity days) are expected to be: visiting historic places, downhill skiing, snowmobiling, sightseeing, and wildlife viewing.* (pg. 3-148)

The use of this study in the EA was to show recreational demands and trends are increasing at a national level. The study was broad in scope and not specific to the Project Area. This reference is listed in full in the EA:

> *Cordell, Ken H., Carter J. Betz, J.M. Bowker, Donald B. K. English, Shela H. Mou, John C. Bergstrom, R. Jeff Teasley, Michael A. Tarrant, and John Loomis. 1999. Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends. pp. 323-350. Sagamore Publishing.* (pg. 4-16)

Comment 41M: We acknowledge that horse use on the Huron-Manistee National Forests does fall within the stated recreational niche. This was identified in the EA:

> *"The recreation niche of the Huron-Manistee National Forests is to provide quality recreational opportunities on nationally recognized rivers, trails, and special areas, motorized and nonmotorized trail systems, and some areas where forest visitors have a probability to recreate away from the sights and sounds of human activities."* (pg. 3-148)

The recreational niche statement for the Forest continues as follows:

> *The Huron-Manistee National Forests have qualities and resources that support the Recreational niche that include:*
> - *Designated and proposed Wild and Scenic Rivers, North Country National Scenic Trail, Lumberman's Monument, Nordhouse Dunes Wilderness, River Road National Scenic Byway, and Loda Lake Wildflower Sanctuary are nationally recognized areas providing quality experiences in natural settings.*
> - *Trail systems supported by a network of partners assisting in the construction and maintenance of motorized and non-motorized trails.*
> - *Large blocks of land designated for semiprimitive management that provide areas for recreationists seeking a more remote experience.*
> - *Camping, trailheads, water access sites, and day-use areas that support water-based and trail-based recreation opportunities. (Facility Master Plan for HMNF, 2006)*

Opportunities for horseback riding on National Forest System lands would continue to be provided under all of the Alternatives analyzed in the Savanna Ecosystem EA. The analysis considers and describes the effects of managing and not managing horse use in Chapter 3 (pgs. 3-148 thru 171). The actions of the alternative selected for implementation would not be applied

to public lands beyond the Project Area, i.e. those areas currently open for horseback riding would continue to be open.

Comment 41N: In 1988, the White Cloud District of the Huron-Manistee National Forests made a Decision on the White River Opportunity Area Analysis (OA). Projects in the OA included: the development of 17 miles of hiking/cross-country ski trail, the closure of 40 miles of road, the removal of an existing gravel pile, the use of this gravel to improve Pines Point Road, the repair of 5 erosion sites, the completion of a river habitat and erosion inventory, and the development of two 10 vehicle parking areas. The trail that you are referring to in your comment was approved through this project and efforts were made to develop-the trail.

After the initial development of a portion of this trail, little to no effort was made to sign and maintain it to standard for its intended uses of hiking and skiing. When the OA was completed in 1988, horse use in the White River was low and demand for a trail, campsites, or parking for trailers was not identified as a need during the public involvement for the project. It has only been over the last 10 or so years that we have seen a growing use of the White River Areas by horses for riding and camping and use has increased to a level where there are impacts to the area's resources.

Members of the Mule Club assisted in the development of the trail. The problem is the design and intended use of the trail at that time was not meant for the levels of horse use that now occurs in this area. The "user-created" label that is on the map for the existing trail (that we refer to as the Knapp Lake Trail) was not meant to indicate that this trail was not an approved trail, rather that it was not developed, nor has it been maintained, for the existing types and numbers of users.

The Karner blue butterfly (KBB) was listed as an endangered species after the completion of the 1986 Forest Plan and the White River Opportunity Analysis; a document prepared to implement Forest Plan direction to manage the White River as Semiprimitive Nonmotorized. Neither document considered KBB habitat management. Since the preparation of these documents the Karner blue has been listed as federally endangered, a Recovery Plan has been prepared by the US Fish & Wildlife Service, and the Forest Plan was revised in 2006. As such, the U.S. Forest Service is required to take certain actions to limit the impacts on the KBB. As it pertains to this area and this trail the Forest Plan direction for management includes (Forest Plan, pg. III-6.1-6):

11 White River

d. Trail locations will avoid concentrated areas of wild lupine and other nectar plants utilized by the Karner blue butterfly and other associated sensitive species. ***Standard***

In order to accommodate and balance the existing recreational uses in the White River area with the management activities that are necessary for the KBB, the existing trail along the river was identified as the best location and was included in Alternative 2.

Comment 41O: We acknowledge that currently all of the area within the WRSNA is open to horse use. This includes all levels of roads. Under Alternative 2, this use would be limited to the

proposed designated trail system. Under Alternative 3, this use would be eliminated from within the WRSNA entirely. Single-track trail (identified in the EA, pg. 3-164) refers to the portions of the trail developed for riders to ride in single file. Double lane riding refers to the portions of the trail where riders could ride side-by-side. The majority of the double lane trail would occur on existing roadbeds.

Comment 41P: The terms "user-developed" and "user-created" are not meant to imply illegality or negativity. They are used to describe how campsite locations have evolved over time and have been defined by users and not thru an analysis that determined how many, what size, and best locations considering the resources and user's needs. No campsites were designated in this area in the White River Opportunity Area Analysis (1988); however the designation of campsites in the White River is identified in the Forest Plan (pg. III-6.1-6):

11 White River

a. Camping areas and sites will be designated. Sites and areas will avoid Karner blue butterfly habitat. ***Standard***

Campsite designation is included as a project in the Savanna Ecosystem Restoration because it addresses the purpose and need for the project. The sites selected for designation took into consideration the existing types and amount of use of the area, as well as those locations that would avoid impacts to Karner blue butterfly habitat.

Comment 41Q: The Huron-Manistee National Forests receives an annual budget; a budget that is never enough to repair, build, maintain or do all of the things the public and the agency would like. To ensure we are getting the most out the funds we receive we establish priorities for each program. Our highest priority for our trail program and funds are the 550 miles of designated trails on the District. Even with this as our priority, the Baldwin-White Cloud Ranger District relies heavily on volunteers and organized trail groups to sign and maintain our trail systems. Without our trail partners we could not provide the variety of trails, nor the trail mileage, that currently exists.

You are correct, resource damage has occurred in areas where there is not a designated trail system, often as a result of the actions of a few or from a prohibited activity such as using an ATV off a designated trail. Many times these areas are closed to even those recreational activities that are allowed because there isn't money to make repairs and/or there isn't an organized group with the necessary resources to restore the damage. Closure is necessary to prevent the damage from continuing and possibly becoming so substantial that resource loss is irretrievable or it becomes a safety hazard.

Included in Alternative 2 of the Savanna Ecosystem Restoration Project is a proposal to designate a non-motorized trail system in the White River that would be constructed using the U.S. Forest Service's standards for horse trails. The proposed trail would be a combination of existing and new trail. To be successful, (i.e. have a trail that meets user's needs, is constructed and maintained to standard, and minimizes impacts to the area's resources) we will need to rely on an organized group of volunteers to make that happen. A designated trail would provide you and others the opportunity to become involved.

Comment 41R: Again, the term "user-created" is meant to imply that this parking area was not designed or officially designated for its current use. The existing condition of this "parking" area is a result of a combination of factors, including: sandy soils, topography, vegetation, level of recreational use, type of recreational use, and the lack of any type of design, improvement or maintenance. This area was an adequate location for large recreational vehicles to use for camping and staging. However, over the long-term-increased use of this area for these purposes has resulted in resource impacts. To continue to provide opportunities for horseback riding and camping in the White River, Alternative 2 includes a designated parking area that would be designed and constructed to accommodate vehicles with trailers. The location of the parking lot would not impact occupied KBB habitat, which the current area does.

Comment 41S: We acknowledge that the damage that is occurring on the banks of the river is not related solely to the use of horses in these areas. Multiple sites were identified, both on the existing "River Trail" and off,-where the combination of topography, soils, and use have (or could have) contributed to degraded conditions on river banks. To prevent the number or size of these areas from increasing and to provide opportunities for watering horses, Alternative 2 proposes to

> *Allow for the watering of horses using buckets at identified permanent water sources on National Forest System lands.* (EA, pg. 2-3)

The exact locations of these sites would be developed in cooperation with the users of the area and would need to consider the cost to construct and maintain and be dependent on site-specific resource conditions.

Comment 41T: Blue dots do represent hiking trails on the Forest map you are referring to. The hiking trails that are shown on this map in the White River Area represent the proposed 17 miles of hiking trails the White River Opportunity Area Analysis (1988). While portions of the trails that are shown may have been constructed or improved, none have been signed or maintained or are included as part of a designated trail system. The last revision of the Forest map was 1990. However, we annually update and have available a map of the WRSNA trails, open and closed roads, and other information that would be useful to the public.

Comment 41U: We acknowledge that there is multiple log landing and historic homestead sites throughout the Project Area and that some have been used as campsites. Barrier posts and gates have been used at many sites throughout the Project Area to protect KBB habitat, but the majority are to close roads to move the White River area towards the desired future condition of Semiprimitive Nonmotorized.

Comment 41V: We are currently conducting savanna restoration treatments on 365 acres within the White River Metapopulation Area under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), and implementing opening restoration treatments to restore occupied KBB sites on 431 acres within the White River and Otto Metapopulation Areas under the Karner Blue Butterfly Habitat Restoration Project (USDA Forest Service 2009c). Under the Savanna/Barrens Restoration Project, the District is conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn

prescriptions to restore KBB habitat. (EA, pg. 3-69) The purpose of these plots is to determine the best methods for creating and restoring the type of savanna habitat that is appropriate for sustaining viable reproducing populations of KBB. The District has developed approximately 104 acres of demonstration plots within the White River Metapopulation Area. Similar demonstration plots would be established within the Otto Metapopulation Area, prior to the implementation of the savanna restoration activities that are included in this project. By applying what it learns from small scale demonstration projects and effectiveness monitoring at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective. (EA, pgs. 3-54 and 64).

Comment 41W: We acknowledge the use of National Forest System lands for firewood cutting is appropriate in designated areas. The cutting of firewood within the White River was initially restricted when it became part of the old-growth design and designated for old growth management as part of Forest Plan implementation. This area is no longer part of the old-growth design because it is within the Muskegon Recovery Unit and is being managed for the federally endangered Karner blue butterfly (KBB). Firewood cutting restrictions are still in place to minimize impacts to habitat. The KBB is also the rationale for the cutting restrictions that exist in the Otto area. No changes to the current firewood cutting boundaries would result from this project.

Restrictions to firewood cutting may occur in areas where there are timber sales, special management areas such as developed campground, or wetlands. Areas have not been closed to firewood gathering because of Indiana bat rather there is a timing restriction for the removal of standing dead trees from May 1 to August 31; the collection of downed material within potential habitat is permitted during this time period. Firewood maps are reviewed annually and changes in open or closed areas are made. In April 2011 the Forest will begin issuing year-round firewood permits. Currently firewood gathering is not permitted in January, February, and March. No long-term changes to the existing firewood cutting boundaries would result from this project.

Comment 41X: The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area. The effects to wildlife would be dependent on the habitat requirements of the species. These effects were addressed within the Environmental Assessment (EA) and Biological Assessment/Evaluation (BA/BE):

> *"Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types"* (EA, pg. 3-81).

Proposed vegetative management activities would increase the quantity and quality of open land habitats (e.g., openings, savanna/barrens) and early successional aspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early successional vegetative types by: maintaining open areas; providing a diversity of foraging habitats; promoting nectaring sources

from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas. (EA, pgs. 3-81 and 82)

> *"Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successional vegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer.* (EA, pg. 3-82)

Overall, activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-82 and 85).

> *"Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to openland habitats (e.g., openings and savannas/barrens) and early successional forest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, red shouldered hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future."* (EA, pgs. 3-90 and 91)

> *"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area."* (EA, pg. 3-91)

Overall, activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest types within the Project Area, and any adverse effects would be expected to be minimal with the implementation of the conservation measures described in Appendix A (EA, pgs. A-5 thru A-12) (EA, pgs. 3-88, 89, 91, 92, and 93).

> *"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles,*

> *and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats. Overall, vegetative management activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal."* (EA, pg 3-98)

Overall, activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A (EA, pgs. A-5 thru A-12) (EA, pgs. 3-96 thru 3-99). Thus, the biologists determination of effects for Regional Forester's Sensitive Species under Alternatives 2 and 3 were that the proposed activities may have no effect, a beneficial effect, or impact individuals or sub-populations, but not likely to cause a trend towards federal listing or loss of viability (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Therefore, there would be both adverse and beneficial impacts anticipated to occur to the wildlife as a result of the activities associated with this project depending on the habitat requirements of the species. There is no specific mention in the EA of the impacts that horses would have on basking turtles.

Comment 41Y: Consideration to the economic effects due to the shift in the type of recreational use in the area was considered in the EA:

> *"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is*

> *impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."*(pg. 3-212)

The costs and revenues (by alternative) for the implementation of this project are listed on Table 3.44 (EA, pg. 3-206) and Table 3.45 (EA, pg. 3-209). The combined cost for implementing Alternative 2 is estimated at $1,900,150. The combined cost for implementing Alternative 3 is estimated at $1,768,450. The costs listed represent a maximum. The EA provides explanation for this:

> *"Due to the adaptive management approach that is used for these activities, the costs associated with these activities are extremely variable. For example, two adjacent areas would likely require different levels of treatments (both in type and scale) to successfully bring the restoration to completion. While prescribed burning alone may be sufficient at one site, an adjacent site may require tree harvesting, tree and stump removal, prescribed burning, and the seeding in of native vegetation. As a result of the differences in these types of treatments, the costs can vary considerably."* (pg. 3-205)

The costs relating to the activities associated with this project are discussed in detail in the EA (pgs. 3-207 and 208). The U.S. Forest Service receives an annual budget that contains funding and targets by program areas such as timber, wildlife, and trails. Funds from one program cannot be used to do work in another. The majority of the funding for the Savanna Ecosystem Restoration project would be from timber and wildlife programs. See our response to comment 41Q for additional information on recreational trail funding.

Comment 41Z: We acknowledge the use of this area by your husband for fishing and hunting. Hunting would continue to be allowed on National Forest System lands throughout the Project Area.
The majority of U.S. Forest Service roads that would be closed with this project occur within the WRSNA. The existing road system in this area includes a combination of jurisdictions; U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status, open or closed, would not be affected by the activities proposed under this project. In addition, motorized access to the North, South, and Main Branches of the White River would continue to be provided by both Forest and county roads for recreational activities (i.e. hunting, fishing, canoeing) in areas outside of the WRSNA, in accordance with the Motor Vehicle Use Map (Map 3.8 of the EA, pg. 3-154). In addition, no changes in hunting or fishing regulations would occur as a result of the decision on this project. Hunting and fishing regulations are developed and enforced by the State of Michigan.

Comment 41AA: We acknowledge that site-specific, localized fluctuations in temperature could occur as a result of implementing Alternatives 2 and 3. This was identified in the EA:

> *"This reduction in overall canopy cover would alter the existing temperature regime of the soil systems in these locations, causing greater seasonal flux. Seasonal increases in soil temperature would result at the sites where vegetation is removed due to increased direct solar radiation reaching the soil surface. This increase would change the dynamics of biomass accumulation by stimulating organic matter decomposition.*

> *Consequently, the thickness of the O horizon would decrease and proportionately more organic carbon would accumulate in the A and B soil horizons as the herbaceous root mass increases. This change would promote short-term nutrient mineralization that would be lost through leaching if prompt revegetation does not occur (Brady and Weil 2002). The magnitude of these effects would be proportional to the amount of canopy removed, the amount of soil exposed, the existing levels of organic matter at the soil surface, and the site-specific historical impact related to land use (i.e. relatively undisturbed vs. old pasture).''* (pgs. 3-135 and 136)

In addition, this project does not propose to clear 20,000 acres in the three county area. This was discussed in the EA:

> *"The projected amounts of forest vegetation treatments (including prescribed fire) to establish savanna/barrens on National Forest System lands could amount to approximately 20,000 acres in the next few decades. Proportionately within the Project Area, this could be 5,000+ acres."* (pg. 2-3)

The 20,000 acres referred to include all of the National Forest System lands within the ~ 1 million acres of the Huron-Manistee National Forests. Under Alternatives 2 and 3 of this project, savanna would be restored or created on approximately 2,950 acres over the next ten years using a combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicide using ground-based application tools. As stated on page 1-11 of the EA, the activities associated with creation/restoration of savanna would occur using an adaptive management approach. The amount and intensity of actual activities would be based on the results of monitoring. This monitoring would include both effectiveness and implementation monitoring (as outlined on pages 2-6 through 2-8 of the EA). Therefore, the 2,950 acres represents the maximum amount of acreage that could receive some type of savanna restoration or creation treatment. All of the treatment units for this project are located in Oceana County, though the Project Area boundary includes portions of Muskegon County.

In addition to effectiveness monitoring, the District is conducting a combination of several types of mechanical treatments and prescribed burn prescriptions within the Project Area to determine the best practices to achieve the desired results for creating and restoring the savanna community type. By applying what it learns from effectiveness monitoring and small scale demonstration projects at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective." (EA, pgs. 3-54 and 64).

The direct, indirect, and cumulative effects to air quality related to the activities proposed in this project are discussed in the EA (pgs. 3-111 thru 3-117). The area of analysis for the direct and indirect effects is Muskegon, Oceana, and Newaygo. The cumulative effects area of analysis considered lands up to 5 miles from the Project Area.

Comment 41BB: As a species, Karner blue butterfly no longer exist in many places it once did. The Karner blue butterfly population within the Huron-Manistee National Forests is declining and timely and effective management to restore, enhance, protect, and maintain suitable habitat is essential. Karner blue butterflies occur only in healthy oak savannas. A savanna is half way between a forest and a prairie. It has scattered trees with many grasses and wildflowers.

Savannas are the world's most endangered ecosystem, more endangered than rainforests or wetlands. Only 0.02% of the savanna in Michigan is left, which is why Karner blue butterflies are so close to extinction. Good Karner blue habitat is also great turkey habitat and great deer habitat. Savannas are better hunting grounds than forests or prairies because they are high in edge, habitat diversity, and wildlife food. Savannas have greater diversity of plants than any other ecosystem in Michigan. (Chris Hoving, DNRE Endangered Species Coordinator)

Many former savannas can be restored. The Karner Blue Butterfly Recovery Plan identifies those areas where the species has the best chance for continued survival and where habitat restoration and maintenance activities have the greatest chance of success (i.e. historic oak barren and savanna areas) contributing to the goal of recovery for the species. Two of these Recovery Units are on the Manistee National Forest. The Savanna Ecosystem Restoration project is located within the Muskegon Recovery Unit.

There are several ways to restore a savanna but it requires more than planting lupine. A combination of mechanical equipment, hand tools, prescribed burning, and/or spot application of basal or foliar spray herbicides would be used to create a mosaic of forested, semi-forested, and open areas that can accommodate a variety of flora and fauna while continuing to provide opportunities for hunting, fishing, hiking, and other recreational activities. The purpose of this project is not to destroy wildlife habitat and eliminate recreational use, but rather to provide habitat that will allow the Karner blue butterfly and other species that benefit from a healthy savanna ecosystem to thrive, not just survive, while continuing to provide opportunities for public use.

Our intent is not to begin the restoration of the savanna in all of these areas simultaneously, but rather in stages, with the initial areas (i.e. demonstration plots) serving to guide what activities would be appropriate in subsequent areas to achieve the desired results. This adaptive approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another.

Comment 41CC: We are not aware of any studies that we have conducted indicating that this project will not work.

Comment 41DD: Reforestation efforts on National Forest System lands are required on all areas where timber harvesting occurs and the area is to remain a part of the commercial timber base. All savanna creation/restoration areas would be removed from the commercial timber base and, therefore, there is no requirement to ensure the area is regenerated with trees. However, these areas will not be devoid of vegetation, but will be a mosaic of openings containing grasses and nectar plants and forested areas. The actions proposed in the Savanna Ecosystem Restoration Project do not result in an irretrievable commitment of natural resources as described:

> *"Irretrievable commitments of natural resources result in the loss of productivity or use of resources due to management decisions made in the alternatives. These are opportunities foregone for the period of time that the resource is unavailable. Under Alternative 1, there would be no irretrievable commitment of resources. Under Alternatives 2 and 3, of the 2,542 acres of savanna creation activities, there would be approximately 2,422 acres that would be permanently*

converted from a forested condition to a non-forested condition (the remaining 120 acres is already classified as open area). These forested areas would be removed from the commercial timber base and there would be a shift in ecosystem productivity as these areas undergo the slow transition to savanna. The commitment is irretrievable, rather than irreversible, as reforestation efforts could be made in these same areas for future inclusion into the commercial timber base." (EA, pg. 3-128)

Comment 41EE: We acknowledge your comments on spotted knapweed and other NNIS within the Project Area. The following resources were used in our discussion on the effects of horse use, the effects on native vegetation, and the spread of NNIS:

Wells, F.H., W.K. Lauenroth. 2007. The Potential for Horses to Disperse Alien Plants along Recreational Trails. Range and Ecological Management. 60:574-577.

Pickering, C.M., and A. Mount. 2010. Do Tourists Disperse Weed Seed? A Global Review of Unintentional Human-Mediated Terrestrial Seed Dispersal on Clothing, Vehicles, and Horses. Journal of Sustainable Tourism. 18(2):239-256.

Pickering, C.M., W. Hill, D. Newsom, Y.F. Leung. 2009. Comparing Hiking, Mountain Biking and Horse Riding Impacts on Vegetation and Soils in Australia and the United States of America. J. Environmental Management xxx: 1 – 12.

Cole, D. N., D.R. Spildie. 1998. Hiker, Horse and Llama Trampling Effects on Native Vegetation in Montana, USA. J Environ. Manage. 53: 61-71.

Campbell, J.D., D.J. Gibson. 2001. The Effect of Seeds of Exotic Species Transported via Horse Dung on Vegetation Along Trail Corridors. Plant Ecol. 157:23-51.

Landsberg, J., B. Logan, and D. Shorthouse. 2001. Horse Riding in Urban Conservation Areas: Reviewing Scientific Evidence to Guide Management. Ecological Management and Restoration. 2(1): 36-46.

Cosyns, E., A. Delporte, L. Lens, and M. Hoffmann. 2005. Germination Success of Temperate Grassland Species after Passage Through Ungulate and Rabbit Guts. J. Ecol. 93: 353-361.

Stroh, E.D., M.A. Struckhoff. 2009. Exotic Plant Species Associations with Horse Trails, Old Roads, and Intact Native Communities in the Missouri Ozarks. Natural Areas J 29:50-56.

Comment 41FF: We acknowledge your support for leaving as many roads open as possible. The National Environmental Policy Act mandates consideration of all reasonable alternatives for a proposed action, including the identification and discussion of alternatives eliminated from detailed study. To develop alternatives, the Interdisciplinary Team reviewed the comments and concerns expressed by the public and internal sources during the scoping process. The issues identified for possible inclusion in an alternative were then reviewed to determine if they related to the Purpose and Need. Those not directly relating to the Purpose and Need of the Project (EA, pgs. 1-7 to 11) were eliminated from further analysis (EA, pgs. 2-8 and 9).

The majority of public lands within the boundaries of the Huron-Manistee National Forests (HMNF) are open to horseback riding. The Savanna Ecosystem Restoration Project analyzed three alternatives. Alternative 1 would not change where horseback riding is currently taking place. Alternative 2 would designate a trail for riding within the White River with no changes proposed to other parts of the Project Area. Alternative 3 would eliminate horse use in the White River, but make no changes to riding opportunities in other parts of the Project Area. Use of the designated campsites proposed in the White River Area under Alternatives 2 and 3 would be free of charge. Also, the majority of the almost 1 million acres of public land on the Huron-Manistee National Forests are open for dispersed camping free of charge; this would not change with the implementation of the Savanna Ecosystem Restoration project.

Comment 41GG: As stated on page 1-11 of the EA, the activities associated with creation/restoration of savanna would occur using an adaptive management approach over a 10-year time period. The amount and intensity of actual activities would be based on the results of monitoring. This monitoring would include both effectiveness and implementation monitoring (EA, pgs. 2-6 thru 8). Therefore, the 2,950 acres represents the maximum amount of areas that would receive some type of savanna restoration or creation treatment. In addition to effectiveness monitoring, the District is conducting a combination of several types of mechanical treatments and prescribed burn prescriptions within the Project Area to determine the best practices to achieve the desired results for creating and restoring the savanna community type. By applying what it learns from effectiveness monitoring and small scale demonstration projects at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective." (EA, pgs. 3-54 and 64).

We acknowledge the need for and efforts of volunteer groups for our trails programs to remain successful and encourage groups to become involved.

Comment 41HH: We consider herbicides to be an effective tool in the control of NNIS and the creation/restoration of the savanna community type. The effects that the proposed herbicides would have on wildlife are discussed in the EA (pgs. 3-59 thru 63, 74, 75, 80, 81, 89, 90, 97, and 110).

Although vegetative management treatments, including herbicide application, may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project Area, the biologists determined that the treatments would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species. (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation, including herbicide application, are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Comment 41II: We acknowledge and will consider your recommendations for implementation of the activities in this project.

Comment 41JJ: Your support is noted for closing U.S. Forest Service roads to motor vehicles within the WRSNA and for providing/allowing access throughout the entire area (with the exception of smaller savanna areas for butterfly habitat) to accommodate other forms of recreation. The three alternatives considered in this project provide for varying levels of recreational access.

Comment 41KK: We are not planning on eliminating whitetail deer from the area. The management of deer populations is outside U.S. Forest Service jurisdiction and authority. Savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 actually might improve habitat for herbivores occurring within the Project Area. In particular, deer might experience an increase in habitat quantity and quality, potentially causing localized increases in deer numbers (USDI Fish and Wildlife Service 2006) and increased herbivory on wild lupine within savanna creation and KBB opening restoration areas (USDI Fish and Wildlife Service 2006). (EA, pg. 3-62).

Comment 41LL: The information relating to the herbicides proposed for use in this project is located in Appendix C of the EA. Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are Restricted-Use and all herbicides would be applied following the safety standards established on the regulatory labels of the herbicide products.

Comment 41MM: Your support for leaving existing roads and trails open for horse use is noted. As discussed in our response to comment 41J, Knapp Lake is a coastal plain marsh. The water level of the lake varies over time due to fluctuations in the depth of the watertable and annual precipitation. There are no activities in this project associated with digging out or modifying Knapp Lake.

Comment 41NN: Opportunities for horseback riding on the National Forest would continue to be provided under all of the Alternatives analyzed for this project. Alternative 2, the Proposed Action, proposes a designated and maintained trail system for riding within the WRSNA. A designated trail is in response to the public's desire to have opportunities for riding in the White River and addresses the purpose and need of protecting habitat. Alternative 3 proposes to address the public's desire for horseback riding and the purpose and need of restoring and maintaining habitat by closing the White River to horses and keeping all other National Forest System lands open for riding.

Comment 41OO: The Savanna Ecosystem Restoration (SER) Project does not include a proposal to close off public lands to horseback riding in a three county area. Management of horse use is proposed in the White River portion of the Project Area which includes parts of Otto and Greenwood Townships.

Brochures and maps are available for all designated trail systems, as well as, wild and scenic rivers and developed recreation areas. A map of the WRSNA is updated annually and is

available to the public. A Motor Vehicle Use Map that shows all open U.S. Forest Service roads, ownership, and county and state roads is updated each year and is available free of charge.

Alternative 2 is the U.S. Forest Service's proposed action for the SER Project. It includes designation of a non-motorized trail system, parking areas, and campsites in the White River area. To be able to successfully implement these projects we will need partners to work with us on constructing and maintaining these facilities. Once in place, a map or brochure would be developed that would describe and display the recreational opportunities available.

Bunkering manure and unused hay is the method used in the Hungerford Recreation Area Campground; a 50 site, $15/night developed campground. Campers are responsible for removing manure and hay from their sites to the manure storage areas. We then pay a contractor to clean the bins once a week and remove the manure from the site. This is paid for with the revenue generated from camping fees. Camping in the White River is considered dispersed. In these settings, it is the responsibility of the campers to remove all of their trash and "Leave No Trace." With implementation comes the how. It is our intent to work with those that have knowledge and expertise, such as you, on how to achieve the objective of minimizing manure and hay left behind at campsites and parking areas without it being overly burdensome on the user.

Comment 41PP: We acknowledge your suggestions for recreational improvements in the Project Area. An alternative dealing with the recreational use of, and adjacent to, the White River was considered but eliminated from detailed study because it did not meet the Purpose and Need for the Savanna Ecosystem Restoration Project (EA, pg. 2-8).

Comment 41QQ: Comments were received from the public during the scoping process that proposed the development of a scenic driving route within the Project Area. It was an alternative that was considered, but eliminated from detailed study because it did not meet the Purpose and Need for the Project (EA, pgs. 2-8 and 9).

Comment 41RR: We acknowledge your recommendations for the management of the transportation system within the Project Area. The White River is in Management Area 6.1 – Semiprimitive Nonmotorized. The desired future condition for the White River is an area characterized by a predominantly natural or natural-appearing environment that emphasizes opportunities for nonmotorized recreation. Managing this area as Semiprimitive Nonmotorized is part of the Purpose and Need of the Savanna Ecosystem Restoration Project and is why road closures in the White River area are proposed. Closing the remaining U.S. Forest Service roads moves the area closer to the desired future condition of Semiprimitive Nonmotorized. Improvements to some roads would occur in support of management activities (EA, pg 3-203). Once achieved, area users can expect a high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, challenge, and risk.

Comment 41SS: As indicated in the EA (pgs. 2-10, 3-22, 51, 107, 114, 161, 177, and 211), the length of time allowed to complete the activities associated with this project is 10 years. Further analysis would need to be completed for any activities related to this project to be carried out beyond this time period.
++++++++++

Commenter: Rhonda Cavanaugh-Jibson
Response:
Comment 42A: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would only be permitted in two circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual stump sprouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur (EA, pgs. 2-4, 3-10, and 25).

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness. Some of these methods are described in the EA (pgs. C-10 and 11).

It should be noted, upon review of the Environmental Assessment, we identified an error in *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209) (see the Draft EA Errata Sheet). In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3.

The herbicides proposed for use are glyphosate, imazapyr, and triclopyr. None of these herbicides are labeled as Restricted-Use, as identified in the EA (pg. C-1):

> *Registration*
>
> *Herbicides cannot be distributed or sold in the United States without being registered with the Environmental Protection Agency (EPA). Before registering a new pesticide or new use for a registered pesticide, the EPA must first ensure that the pesticide (including any adjuvants, surfactants, or other ingredients comprising the product contents), when used according to label directions, can be used with a reasonable certainty of no harm to human health and without posing unreasonable risks to the environment. To make such determinations, EPA requires more than 100 different scientific studies and tests from applicants (US Environmental Protection Agency, website: http://www.epa.gov/pesticides /regulating/registering/index.htm). The EPA classifies these as either general or restricted-use. The criteria for restricted-use include:*
> 1. *Danger or impairment to of public health;*
> 2. *Hazard to farm workers;*
> 3. *Hazard to domestic animals and crops; and/or*
> 4. *Damage to subsequent crops by persistent residues in the soil.*

Human Health and Ecological Risk Assessments (Risk Assessments) have been prepared for each of the herbicides being proposed for use. These-risk assessments for human health effects and ecological effects were used to analyze the effects and describe the environmental consequences of using these herbicides in the Savanna Ecosystem Restoration Project. The Risk Assessments are referenced in the EA and are listed in Chapter 4 (pg. 4-13). In addition, Conservation Measures were developed for this project to further reduce the site-specific human health and ecological risks associated with the use of herbicides (EA, pgs. A-3 and 4).

The effects that the proposed herbicide treatments would have on wildlife are discussed in the EA (pgs. 3-59 through 63, 74, 75, 80, 81, 89, 90, 97, and 110). Although vegetative management treatments, including herbicide application, may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project Area, the biologists determined that the treatments would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species. (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation, including herbicide application, are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71). All determinations were made based on implementation of the conservation measures listed in Appendix A.

Comment 42B: We acknowledge your concerns related to the emissions resulting from the prescribed burn activities that are proposed in this project. The effects on air quality are discussed in the EA (pgs. 3-111 thru 117). Specifically, the EA considers the release of methane, carbon dioxide, and nitrates on pages 3-15 and 16:

> *"For purposes of predicting smoke emissions, it is estimated that the maximum amount of burning that the Forest could practically accomplish in one day is no greater than 1,000 acres. Modeling results indicate that burning 500 acres of forest land under summer conditions (e.g. 75°F, about 10 mph wind speeds, RH 35%, neutral atmospheric conditions, and a 3,000 ft mixing height) would produce a maximum $PM_{2.5}$ concentration of 29 $\mu g/m^3$ at a distance of approximately 4.5 miles from the fire line. This would be below the 35 $\mu g/m^3$ threshold (24 hour average). Using the same conditions and distances, burning 1,000 acres would produce $PM_{2.5}$ concentrations of 38 $\mu g/m^3$ (24 hour average). This would drop to less than 35 $\mu g/m^3$ (24 hour average) at a distance of 5.9 miles from the burn. It is reasonable to expect the actual $PM_{2.5}$ concentrations would stay below the 24 hour NAAQS of 35$\mu g/m^3$ (24 hour average) if burning conditions were more favorable than those modeled. Modeled conditions predicted a plume rise of 3,000 feet. Observed broadcast burning gives plume rise of 5,000 feet or more which would allow for greater dispersion and less impacts for any given area. Concentrations are not compared against the annual standard since a prescribed burning project is a temporary source of emissions lasting only a few days.*

This type and amount of burning is similar to past burning practices on the HMNF. The air quality standards have not been exceeded or substantially impacted by these past activities. While it is predicted that the level of burning proposed under either Alternative 2 or 3 would have short-term site specific impacts to air quality from $PM_{2.5}$ emissions, these impacts would not be substantial.

The GHG emissions from the proposed prescribed burning activities that have the most potential to contribute to global climate change were also estimated and are displayed in Table 3.26."

Table 3.26: Estimated GHG Emissions from a 500 acre Prescribed Burn

Compounds Released	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxides (NO_x)
Emission Results for Burning (lbs)	661,500	31,500	8,000

"A First Order Fire Effects Model (FOFEM) analysis was used to estimate the primary GHG emissions from the proposed prescribed burning activities that have the most potential to contribute to global climate change (Table 3.27). These gas emissions are based on the maximum amount of annual burning that would occur over a ten year period.

Table 3.27: Primary Greenhouse Gas Emissions from Prescribed Burning

Type of Gas	**Alt 2 & 3 Annual Emissions (metric tons/acre)**	**Alt 2 & 3 5 Year Total (metric tons/acre)**	**Alt 2 & 3 10 Year Total (metric/tons/acre)**
Methane (CH_4)	60	300	600
Carbon Dioxide (CO_2)	12,620	63,100	126,200
Nitrogen Oxides (NO_X)	20	100	200

The net addition to the annual global emission rate for GHG is so small that it would result in no detectable change in the cumulative effects in the atmosphere associated with global climate change. The annual CO_2 output that would be anticipated under the maximum number of acres of proposed activities would be projected at 12,620 metric tons or 0.0012 Tg. The annual CO_2 output from these activities would be approximately .00000495 percent of the estimated global CO_2 emissions rate from combustion of fossil fuels for the year 2000. This net addition to the annual global emission rate is so small that it would have no detectable change in the cumulative effects of CO_2 in the atmosphere associated with global climate change. Since the amounts of CH_4 and NO_x are even less than that of CO_2 relative to global outputs, no detectable change in the cumulative effects from these gases related to global climate change is expected."

Comment 42C: We acknowledge your concerns about the emissions from secondary burning of chemically treated areas. While site-specific studies on the emissions of chemically burned areas have not been carried out, this scenario is referred to in the respective herbicide Risk Assessments (see response to 42A). The burning of areas that have been chemically treated within 30-180 days of the burn is referred to as brown-and-burn operations. The following are excerpts from the Risk Assessments determining the effects related to these operations:

<u>Glyphosate</u>
"The only area of remarkable uncertainty concerns brown-and-burn operations. Glyphosate, like Roundup, does not appear to be very toxic by inhalation (Section 3.1.13). Although residues of

glyphosate in air during brown-and-burn operations have not been measured, they are likely to be very low given that brown-and-burn operations take place about 30 to180 days after treatment with the herbicide and the foliar half-life is from 1.6 to 46 days. Consequently, there is no evidence to suggest that toxic levels of glyphosate are likely to be encountered.

The combustion of wood and wood by-products may produce a number of toxic compounds. This is a concern with brown-and-burn operations but does not pertain to the use of glyphosate or any other herbicide. Nevertheless, as discussed in section 3.1.13, glyphosate forms a polycondensate on combustion at temperatures ranging from 200 to 240°C. It is likely that other combustion products are formed under different combustion conditions. No information is available regarding the inhalation toxicity of the polycondensate or other possible combustion products.

The potential effects of combustion products is common to all risk assessments of materials that might be subject to burning. With the exception of some plastics, the combustion products of which are known to pose a risk to fire fighters, the combustion products of most chemicals have not been examined in detail. The necessity of addressing this data gap must be weighed against the need to address other data gaps on glyphosate and other chemicals. The combustion products of burning wood and vegetation are respiratory irritants as well as carcinogens, and exposure to these combustion products should be avoided. There is no basis for believing that the presence of low or even high levels of glyphosate residues will have a significant impact on this hazard." (Glyphosate Risk Assessment, pages 3-49 and 50)

Imazapyr
"Although inhalation of imazapyr is not a typical route of exposure, it may occur during brown-and-burn operations. The post-treatment burns in brown-and-burn operations are conducted 30 to 180 days after treatment with the herbicide (McMahon and Bush 1992). McMahon and Bush(1992) found no detectable levels of imazapyr in the breathing zone of workers during brown-and-burn operations in plots that had been treated with imazapyr 69 or 106 days earlier at application rates of up to 3.5 L/ha (0.92 gal/ha or 1.84 lbs imazapyr a.e./ha or about 0.77 lb a.e./acre)."(Imazapyr Risk Assessment, pg 3-9)

Triclopyr
"In some instances, areas treated with triclopyr may be subject to brown-and-burn operations. As discussed in USDA (1989b), these operations involve burning a treated area 30–180 days after treatment with the herbicide." (Triclopyr Risk Assessment, page 2-3)

"The study by Leslie et al. (1996) does indicate that white-tailed deer will avoid areas treated with herbicides followed by prescribed burning. There is no indication, however, that this avoidance is associated with a toxic effect from the herbicide." (Triclopyr Risk Assessment, pg 4-5)

The following is from *Appendix 11: Summary of field or field simulation studies on triclopyr formulations* of the Triclopyr Risk Assessment.

Summary 1
*"**Application:** Aerial application of triclopyr TEA at a rate of 2.2 kg a.i./ha to cross timbers region of Central Oklahoma with and without prescribed burning . Objective of study to evaluate habitat use by male and female white-tailed deer on areas treated with herbicides, prescribed fire, and both in the cross timber."* (Triclopyr Risk Assessmemt, page 11-7)

> ***"Observations:*** *Both sexes selected and avoided specific brush treatments throughout the year. Female deer were considerably more selective than males of human altered habitats. No clear pattern of selection or avoidance of triclopyr and tebuthiuron treatments were apparent. Variable herbicide and burn application patterns (mosaic) seems to enhance cross timbers rangeland for white-tailed deer."* (Triclopyr Risk Assessmemt, page 11-7)

Comment 42D: We acknowledge your concern for the effects of this project on Blanding's Turtle, Eastern Box Turtle, Hill-Prairie Spittlebug, Northern Goshawk, Wood Turtle, Bald Eagle, Cerulean Warbler, Dusted Skipper, Frosted Elfin, Louisiana Waterthrush, Prothonotary Warbler, Red-Headed Woodpecker, Whip-poor-will, deer, bear, coyote, rabbits, snakes, and other wildlife, including the Karner blue butterfly. The effects of this project on these species were considered in the EA in the following places, by species:

Blanding's Turtle: 3-42, 43, 47, 48, 49, 50, 51, 61, 95, 96, 97, 98, 99, 100, 101, and 102; 4-11 and 13; A-11 and 12.

Eastern Box Turtle: 3-41, 42, 43, 45, 48, 49, 50, 77, 78, 79, 80, 81, 82, 85, 87, 88, 89, 90, 91, 92, 93, 94, 95, 100, 101; 4-1; A-11

Hill-Prairie Spittlebug: 3-43, 44, 49, 50, 77, 78, 79, 80, 81, 82, 83, 85, 100, 101; A-12

Northern Goshawk: 3-42, 43, 46, 48, 49, 50, 61, 80, 87, 88, 89, 90, 91, 92, 93, 94, 95, 101, 102; 4-11, 12, 13; A-11, 12

Wood Turtle: 3-42, 43, 47, 48, 49, 50, 51, 61, 95, 96, 97, 98, 99, 100, 101, 103; 4-11, 4-13; A-12

Bald Eagle: 1-5; 3-42, 43, 45, 48, 50, 61, 75, 80, 87, 88, 89, 90, 91, 93, 94, 95, 97, 101, 102; 4-13, 14; A-12; B-7

Cerulean Warbler: 3-42, 43,46, 48, 50, 87, 88, 89, 90, 91, 93, 94, 95, 101, 102; 4-11, 13; A-11, 12

Dusted Skipper: 3-41, 43, 44, 48, 49, 77, 78, 79, 80, 81, 82, 83, 85, 100, 101; A-12

Frosted Elfin: 3-41, 43, 45, 48, 49, 77, 78, 79, 80, 81, 82, 83, 85, 100, 101; A-12

Louisiana Waterthrush: 3-42, 43, 46, 48, 49, 50, 87, 88, 89, 90, 91, 93, 94, 95, 101, 102; 4-11; A-12

Prothonotary Warbler: 3-42, 43, 46, 48, 49, 50, 87, 88, 89, 90, 91, 93, 94, 95, 97, 101, 102; 4-11; A-12

Red-Headed Woodpecker: 3-41, 43, 45, 48, 50, 77, 78, 79, 80, 81, 82, 85, 90, 102; A-11

Whip-poor-wills: 3-41, 43, 45, 48, 50, 77, 78, 79, 80, 81, 82, 85, 86, 101, 102; A-12

White-tailed Deer: 3-32, 39, 41, 42, 53, 62, 77, 80, 81, 82, 87, 90, 149, 150; 4-8, B-7

Coyote: 3-41, 42, 77, 82, 87

Rabbit: 3-32, 41, 77, 82

Snake (included with reptiles): 3-42, 61, 74, 79, 80; A-12

Karner Blue Butterfly (KBB): 3-41, 43, 44, 47, 48, 51 through 69, 77, 78, 79, 81, 82, 83, 84, 86, 88, 90, 91, 96, 97, 98, 100, 101, 110, 115

Other wildlife species were considered in the EA by habitat type:

Wildlife Associated with Early successionalVegetative Types: 3-77 thru 85
Wildlife Associated with Mid- to Late-Successional Forest Types: 3-86 thru 94
Wildlife Associated with Streams, Creeks, Lakes, and Wetlands: 3-95 thru 100

Under all Management Areas, wildlife management objectives on National Forest System lands include the following:

- *Meet species viability needs, achieve fire hazard reduction, and accomplish fiber production from regulated (Allowable Sale Quantity) and non-regulated (non-chargeable) forest lands primarily through timber harvest.*
- *Monitor wildlife responses to management practices using identified Management Indicator Species to determine the effects of management practices on wildlife and fish populations.*
- *Wildlife and fisheries habitats and plant communities shall be managed to maintain viable populations of existing native and desired non-native species.*
- *Maintain or improve the populations of endangered, threatened or sensitive species or communities.*
- *Manage the 5-mile (8 km) radius around Tippy Dam to benefit the Indiana bat.*
- *Restore and maintain savannahs, prairies, dry grasslands, mesic grasslands, shrub/scrub and oak-pine barrens in areas where they were known to previously occur, to provide for habitat diversity and to meet species viability needs.*
- *Utilize prescribed fire to meet management direction as appropriate for the ecosystems involved.* (Forest Plan, page II-4)

The wildlife management objectives specific to Management Area 4.4, include:

- *Maintain or increase wildlife habitat diversity.*
- *Provide improvements for fish habitat.*
- *Intensively manage grouse emphasis areas to provide quality grouse habitat and manage aspen intensively.*
- *Management will strive to increase utilization of wood residues and other currently nonmerchantable material, when not needed for resource concerns, such as soil productivity and wildlife habitat, for fuelwood and other special forest products.*
- *Manage permanent openings and/or grasslands to meet species viability needs.* (Forest Plan, pg III-4.4-3)

The wildlife management objectives specific to Management Area 6.1, include:

- *Provides a variety of fish and wildlife habitats for species which avoid human activity.*
- *Provides habitat suitable for species requiring an old-growth environment.*

- *Manage permanent openings and/or grasslands to meet species viability needs.*

The activities that are proposed in Savanna Ecosystem Restoration Project are consistent with these objectives. In addition, specific Conservation Measures (Appendix A of the EA) would be incorporated to minimize any adverse effects that these activities would have on individual wildlife.

Comment 42E: Annually two federal payments are made to the counties; Payment in Lieu of Taxes (PILT) and either a share of the 7 year 25% rolling average payment or a share of the Secure Rural Schools State (formula) payment. The PILT is a payment to local governments to help offset losses in property taxes due to non-taxable federal lands within their boundaries. The Department of the Interior's (DOI) Office of the Secretary has administrative authority over the PILT program. The DOI calculates payments according to the formulas established by law and distributes the funds appropriated by Congress. The Fiscal Year 2010 payment was made June 29, 2010. The 2010 payment to Oceana County was approximately $65,000. Neither this payment nor what has been historically known as the 25% payment can be diverted by the U.S. Forest Service for other uses.

Comment 42F: ORV grant money is available through the State of Michigan for trail maintenance, law enforcement, and ORV damage restoration. The U.S. Forest Service is eligible to apply for the trail maintenance and damage restoration grants. Trail maintenance grants are available to agencies or partner groups to conduct routine maintenance, such as brushing and signing, on designated ATV and motorcycle ORV damage restoration grants are project specific and for the rehabilitation of damaged public lands. These grants are authorized, reviewed, and inspected by the State of Michigan. Restoration grants require the work to be completed within two years of award and the cost of the projects is reimbursed once the work is completed.

Because the use of ORV grants are limited to ORV-related trail maintenance or site restoration, the use of these funds for the management of dispersed camping sites within the White River Semiprimitive Nonmotorized Area (WRSNA) would not be appropriate. However, there are ORV damage sites along the White River in the Otto portion of the Project that are eligible. These sites were submitted for an ORV damage restoration grant in 2009 and were selected for funding by the State of Michigan. Work on these areas will be completed by 2011 (EA, pgs. 3-126 thru 129).

Comment 42G: The use of prescribed fire is not proposed in close proximity of an existing sour gas pipeline. Prior to any prescribed burn a site-specific burn plan is prepared. The plans outline the environmental conditions required for conducting burn activities (i.e. wind direction, humidity, and temperature thresholds), the number of resources required, the desired time of year, contingency plans, and any site-specific burning restrictions, such as the presence of buried pipelines that may apply. Burn units are developed by considering existing control lines (i.e. roads, plow lines, etc.), fuel types, and natural features. The size of individual burn units can vary considerably, but efforts are made to keep the burn units to a size that can be safely completed within one operational period (one day) (EA, pg. 3-111).

Comment 42H: The effects that the three alternatives analyzed for the Savanna Ecosystem Restoration Project may have on property values are described in Chapter 3: Existing Conditions, Affected Environment, and Environmental Effects and are summarized below.

Alternative 1

"Fluctuations in property values may occur due to local, state, or national market trends and as a result of the site-specific characteristics of individual properties. Individual consumers have little control over the market trends in real estate. The site-specific values associated with individual properties are in some ways related to personal preference. For example, one person may place more value on a solitary dwelling in a country setting, while another may place more value on an urban dwelling with neighbors close by. Therefore, management activities that affect an existing environment may decrease the value of that environment to one landowner and increase the value of the environment to another. This alternative would continue to provide adjacent landowners with an environment that is consistent with what has been present historically."
(EA, pgs. 3-210 and 211)

Alternatives 2 and 3

"As a result of the activities associated with the creation and restoration of savanna, Alternatives 2 and 3 would alter the viewshed of adjacent private landowners within portions of the Project Area. While these changes may impact the perceived property values to the existing private landowners, there may be others who would prefer the viewshed that will be created. The projects proposed under these alternatives are not expected to cause fluctuations in the values of real estate within or adjacent to the Project Area, especially when compared with occurring trends across the Northern Lower Peninsula of Michigan." (EA, pg. 3-212)

The economic effects of this project were considered in the EA (pgs. 3-205 thru 212). Specifically, the direct and indirect effects to local tourism were considered on pages 3-205 and 206.

"The closing of roads within the SPNMA would cause a shift in the type of recreational use within this area. The majority of existing use in this area is dependent on motorized vehicle access, either directly (i.e. driving for pleasure) or indirectly (i.e. the hauling of campers or horse rigs). Limiting the motorized access in this area to the existing county roads would change the recreational experience in this area. As a result, some of the existing motorized-dependent users would likely make a choice to go to other locations both inside and outside of the Project Area.

In the short-term, this shift would likely have minor economic impacts for those that are immediately adjacent to the Project Area; however, these impacts would not be likely to extend beyond the boundaries of this analysis (50 mile radius). These impacts would be more pronounced under Alternative 3, as horse use would be limited to areas outside of the SPNMA. Again, this use would also be likely to shift to other locations of the Forest and be unlikely to have major economic impacts that would extend beyond the analysis boundary.

In other areas throughout the Project Area, the short-term recreation use on the Forest would be displaced during harvesting operations and periodically thereafter during the follow-up restoration treatments. This displacement would not have lasting economic impacts within the analysis boundary, as users would likely move to other adjacent areas on the Forest during the period of displacement."

The cumulative effects to the economy were considered on page 3-212:

> *"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."*

Specific to recreation, the Project Area has had high levels of historic and current use (EA, pg. 3-149). Under Alternative 1, this use would not change. Under Alternatives 2 and 3, the intent is not to eliminate recreational use in the area. Under these alternatives, it is anticipated that the recreational use within the WRSNA will shift away from motorized-dependent recreational activities to those forms of recreation that are not dependent on motorized access, as described for Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new users to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other public or private lands that accommodates their recreational use. This is described for Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that is most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

This project would also provide the opportunity for economic benefit:

> *"… additional employment opportunities associated with timber harvesting activities and the creation and restoration of the savanna ecosystem. Employment opportunities would likely be in the form of contractors and seasonal and permanent staff. Included would be such activities as: timber sale layout and administration, timber harvesting, timber stand site preparation, regeneration surveys, savanna site preparation, NNIS/savanna herbicide application, seeding and planting, road and parking lot construction and maintenance, and wildlife surveys. Further contributions to the economy would occur through the purchasing of materials and supplies necessary to accomplish the work. These activities would occur over a period of up to 10 years and, when compared with the economy of Northern Lower Michigan, would have little to no impact on the prevailing conditions. In addition to the projects that would be implemented under Alternatives 2 and 3, other similar types of projects would also be likely to occur within this Project Area and in other locations of the HMNF. These projects would also contribute to the*

economy of Northern Lower Michigan and would likely have beneficial cumulative effects on the public and private natural resource management sector.

In addition, the implementation of either of these alternatives would provide payments from the 25% Fund which would be used to assist in the funding of improved transportation systems and education within the counties where treatment activities are proposed. These same types of funds would be available to other counties where similar types of projects occur. While individual projects would likely have only a small impact on the respective county coffers, cumulatively the income generated from the 25% Fund could serve as an important supplement in counties that have been hit the hardest by the recent economic downturn." (EA, pg. 3-211)

Comment 42I: We acknowledge that implementation of the desired future condition of Semiprimitive Nonmotorized management in the White River area will have an effect on historical recreational use. These effects for Alternatives 2 and 3 are described in the EA on page 3-202:

"Within this Project Area, the existing Forest Service road system plays an important role in how people have historically and currently utilize the National Forest. Alternatives 2 and 3 would change this use through implementing changes to this system. With this change, there would be social impacts. The social aspects would be related primarily to the reduction in motorized access to the WRSNA. This would impact not only those who historically and currently have used this area for motorized-dependent recreation (i.e. dispersed camping, driving for pleasure, etc.), but also those who have utilized adjacent areas. It would be anticipated that as a result of Alternatives 2 and 3, there would be an increase in this type of use in the adjacent areas by those who are displaced from the WRSNA. Many of the visitors that currently use this area and prefer or require motorized recreation would be likely to move to other locations if the roads closed under these alternatives impact the areas where they have traditionally recreated. These areas are provided in many of the other Management Areas that are part of the HMNF."

Historical access to the White River at Pines Point, Diamond Point, Sischo Bayou, and Podunk will not be changed by this project. White River access sites, outside of the Project Area, include the M-20 Rest Area, Hesperia, Taylor Bridge, Happy Mohawk, and numerous un-designated sites at road ends. Alternatives 2 and 3 propose a parking area at the east end of Winston Road. The South Branch of the White River would be accessible a short distance from this site and the access would be considered "walk-in". Access to the North Branch of the White River from the west side of the Project Area would remain unchanged and is identified on the Motor Vehicle-Use Map (MVUM).

Comment 42J: We acknowledge your concerns about emergency vehicle access within the WRSNA. The Forest roads within the WRSNA that are currently open (seasonally or year round) and that would be closed (year round) under Alternatives 2 and 3 include: FR5306, FR9045, FR5295, FR7992, FR5315, and FR9353. As shown in Table 3.41: Alternatives 2 and 3 Road System Proposals in the White River Portion of the Project Area, all of these roads would be "*closed to motorized vehicles and stored for administrative use*" (EA, pg. 3-195). The "storage" of U.S. Forest Service roads includes the placement of gates that would allow access into remote areas for both administrative and emergency vehicle access. In addition, the existing county roads would remain open in this area. These include: 148th, 152nd, 160th, and 168th Avenues, and Winston and Arthur Roads (adjacent) (EA, pg 3-195). These roads would continue to provide

access for emergency vehicles throughout this portion of the Project Area under all of the alternatives.

Under Alternatives 2 and 3, the resulting transportation system in the White River area would meet the Forest Plan direction for Semiprimitive Nonmotorized Areas (Management Area 6.1), and the Purpose and Need for the Savanna Ecosystem Restoration Project as described in the EA on page 3-199:

> "*In comparison: These alternatives would provide the minimum amount of motorized public access throughout the WRSNA. The resulting road density (1.0 miles/square mile) would be within the Forest Plan desired road density for Management Area 6.1 (0-1 miles/square mile) and would be in accordance with the Forest Plan Guideline to: "Close all Forest Service roads to motorized vehicles except for emergency and administrative use."*

Comment 42K: We acknowledge your concerns about the future costs associated with enforcement and maintenance. The estimated costs and revenues for this project are displayed in the EA in *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (pg 3-206) and *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (pg 3-209). See the response to 42A regarding the changes that are identified in the Draft EA Errata Sheet. The values used in these tables are estimates. The actual cost of implementation could be lower based on the activities that are actually necessary to achieve the desired habitat conditions. This is determined through the monitoring of the treatment sites after the initial treatments have occurred.

The creation or restoration of savanna associated with this project would occur through the processes of adaptive management (EA, pgs. 1-11, 3-19, 24, 30, 35, 54, 64, and 206). In adaptive management, success is dependent on the monitoring of treatment areas after activities have occurred. This allows the future treatments to be modified as necessary in order to adjust to site-specific conditions that may vary between sites. This includes such factors as local soil conditions, micro-climate and micro-topographical fluctuations, and the existing vegetative and seedbank composition. Post-treatment monitoring determines the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. As a result of this response, different locations are likely to progress toward the desired future condition at different rates and require different types and levels of treatments and maintenance over the next ten years.

Law enforcement activities on the Forest are carried out by Law Enforcement Officers (LEOs) and Forest Protection Officers (FPOs). Law enforcement is the primary duty of LEOs. They are fully trained and equipped (emergency vehicle, firearm, etc.) to handle the wide variety of infractions that can occur on National Forest System lands. Each District on the Huron-Manistee National Forests has at least one full-time LEO, with additional LEOs available for support of a special project. LEOs are funded at a regional level, not out of the District's budget. FPOs are District U.S. Forest Service personnel that enforce minor infractions on National Forest System lands as a collateral duty. They receive law enforcement training, but do not carry a firearm. FPOs enforce the laws relating to infractions that are not considered dangerous or life-threatening. The funding for FPOs comes out of the District budget. The money that is allocated for LEOs and FPOs does not fluctuate based on increased need in particular areas. Rather,

resources are allocated or re-allocated to areas of need. While the increased levels of enforcement that may be necessary in the Project Area would contribute to increased direct costs for enforcement, there would not be increased allocations for these costs in the budget. It is recognized that increased enforcement in this area could detract from the resources that may be available for enforcement in other areas of the Forest.

Comment 42L: We acknowledge your request for a copy of the Decision Notice and the application of relevant statutory and regulatory criteria for this project.

Comment 42M: For most projects being proposed on National Forest System lands, public involvement begins with the scoping letter. For this project the public involvement began prior to the scoping letter, with informational signs placed on bulletin boards leading into the WRSNA on July 22, 2009. The signs described the upcoming proposed management activities for the Project Area and explained how the public could provide input. In the fall of 2009, U.S. Forest Service staff went throughout the Project Area contacting area users to discuss the upcoming project and to place informational flyers on parked vehicles. A notice of the beginning of the scoping process was posted in the Oceana Herald Journal. In addition, the Grand Rapids Press ran an article on the proposed project. During the 30-day scoping period, we met with individuals and groups to discuss the proposed activities.

A scoping letter dated December 10, 2009 was mailed to approximately 1,011 interested parties, including county and township officials, businesses, members of the general public, industry, property owners within the Project Area, environmental groups, and tribal representatives. The scoping letter described the existing condition of the resources within the Project Area and outlined the Savanna Ecosystem Restoration Proposed Action. Public involvement for the project also included listing of the project in the HMNFs' Schedule of Proposed Actions as well as posting the scoping documents on the Forest's website. The scoping letter asked for any issues relevant to the site-specific proposal. During the scoping period, approximately 114 responses were received.

Given all of these efforts during scoping to provide information to those that may be interested in or be affected by a proposed project we know some will be missed. That is why there is another opportunity to comment during the 30-day comment period for the Environmental Assessment. The purpose of this comment period is to ensure that all the issues concerning a proposed project have been identified and addressed. The notice for the 30-Day Comment Period was advertised in the Lake County Star because that is the Newspaper of Record for the Baldwin-White Cloud Ranger District where legal notices should appear.

Comment 42N: We acknowledge your recommendations for management activities associated with the Karner blue butterfly. Unfortunately, planting lupines in existing fields found anywhere doesn't provide the habitat needed by the Karner blue butterfly. The best locations are dependent on a variety of factors, including: soils, climate, vegetative types, and the presence of the Karner blue butterfly. The areas included in this project meet all of these criteria and are within the Otto and White River Metapopulation Areas of the Muskegon Recovery Unit; areas identified in the Karner Blue Butterfly Recovery Plan prepared by the U.S. Fish and Wildlife Service.

Comment 42O: We acknowledge the important role that the timber industry had in the history of Western Michigan and, more specifically, Southeast Oceana County. While some historical information is described in the EA (pgs. 3-110, 145, 182, 213, and 214), we appreciate the efforts made to provide us with additional historical information and perspective.

Comment 42P: The identification of the historic ecosystems that occurred in specific areas is determined through a combination of historic records and the existing characteristics of the vegetation and soils of an area. To date, the most thorough historic account of the ecosystems that existed in Michigan prior to settlement has been compiled by Albert and Comer (2008) using the General Land Office Surveys. The complete reference is as follows:

> *Comer, P.J. and D. A. Albert. 2008. Atlas of Early Michigan's Forests, Grasslands, and Wetlands: An Interpretation of the 1816-1856 General Land Office Surveys. MNFI. Michigan State University Press. Lansing, MI. 107* pp.

An excerpt from this atlas best describes these surveys (pgs. viii and ix):

> *"The Township plat maps and transcribed field notes of the initial General Land Office (GLO) land surveys provide the best available records of Michigan's native landscape (Bourdo, 1956). The GLO was established by the federal government in 1785 to survey the nation's western territorial lands. Lands of what was then the Michigan Territory (before statehood in 1837) had to be surveyed prior to their sale to private individuals. The surveys were conducted in Michigan by deputy surveyors of the General Land Office between 1816 and 1856, before widespread European settlement. Base and meridian lines had been established several years earlier. The survey was, therefore, conducted just before the logging era, which saw the most dramatic transformation in Michigan's natural landscape since the last glaciation."*
>
> *"Between 1816 and 1856 Government Land Office surveyors mapped a one-mile grid across the surface of Michigan, starting in the southeast near Lake Erie and finishing at the Wisconsin border along Lake Superior. The surveyor's maps opened the lands of Michigan to land claims, settlement, and sale, and large parts of the grid were gradually transformed into our present road system.*
>
> *The Land Office surveyors were not only creating a grid for land ownership, they also were recording information about the land and its vegetation, describing fertility of the soil, mapping bedrock exposures, and recording the size and types of trees. Along the way, surveyors also made reference to trails and other features established by Native Americans. In addition, they noted locations of natural disturbances to vegetation, such as areas previously burned by wildfire and areas of blow-down trees from severe wind storms."*

In this atlas, the majority of the Project Area is recorded as being historically forested with the white pine-white oak and white pine-mixed hardwood forest types. However, there are portions of the Project Area that are recorded as consisting of the oak/pine barren type (Ibid, pgs. 29 and 39). The description for this ecological type as it pertains to this response is as follows:

> *"White pine and white oak were the characteristic dominants of the oak-pine barrens. These barrens also occurred on extreme fire-prone sand plains, adjacent to more extensive forests or*

white pine and white oak. The oak –pine barrens generally occupied a zone between the more southern oak barrens and the more northerly pine barrens…..Prairie-associated grasses and forbs were probably quite common in the barrens in both the Lower and Upper Peninsulas…..The rare Karner blue butterfly (Lycaeides Melissa samuelis), whose caterpillars feed on the foliage of the common lupine (Lupinis perennis), is found largely within openings previously dominated by open oak-pine barrens in the western Lower Peninsula."

The historical presence of the oak/pine barren ecological type is also described in the EA:

"Historically, approximately 10 percent (or 60,000 acres) of the Manistee National Forest was made up of some type of savanna system (HMNF Programmatic Biological Evaluation 2005). Fire was the major disturbance factor influencing the creation and maintenance of these systems, with the most open areas likely burning in successive years (Corner pers. comm. 2003c.f.; USDA Forest Service 2005). In an unaltered condition, savannas support a diverse flora including numerous species that are characteristic of dry prairies. A number of plant and animal species were reduced in frequency of occurrence and density as these communities became closed canopy forests (VandeWater 2004). The savanna ecosystem is now considered rare throughout its historic range in Michigan, with the majority having either been destroyed through land conversion or altered as a result of plant succession (Chapman, et al. 1995)." (EA, pg. 3-18)

"Openings, prairies, savannas, and barrens have declined within the Huron-Manistee National Forests (HMNF) over the past century due to extensive reforestation, increased fire control efforts, and the processes of natural succession. Remnant openings, prairies, savannas, and barrens are filling in with fire intolerant woody and shade tolerant herbaceous species. As a result, suitable habitat for the Karner blue butterfly (KBB), a federally-listed Endangered species and Terrestrial Management Indicator Species associated with oak/pine savanna and pine barren communities, is becoming scarcer. The decline in KBB habitat quality and quantity within the HMNF has led to a reduction in occupied subpopulations." (EA, pg. 3-41)

Comment 42Q: Proving the existence of the Karner blue butterfly (KBB) 400 years ago is beyond the scope of this project; however, the activities proposed in the Savanna Ecosystem Restoration Project are based on the historical range of the KBB. This range is discussed in the Karner Blue Butterfly Recovery Plan (USFWS, 2003), as follows:

Rangewide Distribution of Karner Blues

Historically, the Karner blue butterfly occurred in a geographic band between 41° and 46° North latitude extending from Minnesota to Maine (Dirig 1994) (refer to Figure B-1, APPENDIX B)…. Dirig (1994) reviewed all of the locality records of the Karner blue he could find, whether or not they were confirmed with vouched specimens. His work is an exhaustive summary of the reports of Karner blue occurrence. To establish a definitive historic geographic range, this recovery plan only includes locality records with confirmed specimens.

The historic northern, eastern, and western limits of the butterfly correspond roughly with the distributional limits of lupine. In all three regions, the present distribution of the butterfly has contracted away from these limits, with extirpations of populations occurring in all three geographic directions. The northernmost population of the Karner blue occurs in the Superior Outwash Recovery Unit (RU) in Wisconsin, the westernmost population in the Paleozoic

Plateau RU in Minnesota, and the easternmost population in the Merrimac/Nashua River System RU in New Hampshire (refer to APPENDIX B, Figures B2 and B4).

The historic southern limit of the butterfly did not correspond to the distribution of lupine, which occurred historically much further south than the butterfly. But even here the distribution of Karner blue has contracted away from the historic distribution. The southernmost population of Karner blue is now in the Indiana Dunes RU (refer to APPENDIX B, Figure B3). (KBB Recovery Plan, pg. 6)

Additional information on the historical range of the KBB is provided in Appendix B of the KBB Recovery Plan:

HISTORIC DISTRIBUTION

The historic northern limit of the butterfly corresponds roughly with the northern limit of lupine (Dirig 1994), but the current distribution indicates that the butterfly has contracted away from this limit. Many of the most northern populations of Karner blue have been extirpated… Lupine has been reported from as far north as northern Vermont, and Elk Rapids, Michigan, but there are no records of the Karner blue from these sites. The only populations of Karner blues now near the northern limit of lupine occur within the Superior Outwash RU in Wisconsin.

The historic western limit of the butterfly roughly corresponds with the western limit of lupine (Dirig 1994), and butterfly distribution appears to have contracted away from this limit as well. Although lupine occurs as far west as central Minnesota, the western-most record of Karner blue is at Anoka, Minnesota, approximately 50 miles to the east…Currently, the western-most populations of Karner blue occur in the Superior Outwash RU and at the Whitewater WMA in southeast Minnesota in the Paleozoic Plateau RU.

The historic eastern limit of the butterfly roughly corresponds with the eastern limit of lupine. One historic record for the Karner blue exists for Conneticut (Robert Dirig, Cornell University, New York, in litt. 2002) but the actual location (state) from which the specimen was collected is not entirely certain... The eastern-most historic records of Karner blue exist from southwest Maine and throughout the Merrimack River valley system in New Hampshire and Massachusetts, but currently, this eastern-most population has contracted to a very small population near Concord, New Hampshire.

Unlike the other geographic limits, the historic southern limit of the butterfly does not correspond to the southern distribution of lupine. The distribution of lupine extends farther south than the Karner blue in the eastern United States along the eastern Appalachian Mountains and the Atlantic Coastal Plain, and in the central United States, in Illinois (Dirig 1994). Some of the historic records of the Karner blue along this southern limit are uncertain… Despite this uncertainty, similar to the other geographic limits, the distribution of the Karner blue has contracted away from its historic southern limit. Populations have been extirpated from southern New York, Pennsylvania, Ohio, Illinois, and Iowa. In Indiana, the distribution has contracted. Once present throughout northern Indiana, it now occurs only in a few localities in northwestern Indiana, associated with the dune fields and dune and swale complexes near the southern end of Lake Michigan. (KBB Recovery Plan, pgs. B-7 and 8)

The following is a discussion from the Karner Blue Butterfly Recovery Plan (USFWS, 2003) on the taxonomy and species designation for the KBB.

TAXONOMY AND DESCRIPTION

Taxonomy

The taxonomy of the Karner blue (Lycaeides melissa samuelis) follows Lane and Weller (1994) who have conducted the most recent review of its taxonomy. The Karner blue is a member of the genus Lycaeides (Lepidoptera: Lycaenidae: Polyommatinae) (Elliot 1973, Nabokov 1943, 1949). In North America there are two species of Lycaeides, L. idas (formerly L. argyrognomon) and L. melissa (Higgins 1985, Lane and Weller 1994). Lycaeides melissa is comprised of six subspecies, L. m. melissa, L. m. annetta, L. m. inyoensis, L. m. mexicana, L. m. pseudosamuelis, and L. m. samuelis (Lane and Weller 1994). Vladimir Nabokov conducted the taxonomy for this group in the 1940s. Sometime after this work was published, Nabokov commented in private letters that the Karner blue should be classified as a distinct species (Nabokov 1952, 1975, 1989). Nabokov noted that the male genitalia of L. m. melissa were very variable geographically, but the male genitalia of L. m. samuelis were remarkably constant over the entire range of the subspecies. The wing shape of L. m. samuelis is rounder and less pointed than that of L. m. melissa, especially the female hind wing. Moreover, L. m. samuelis uses only one host plant throughout its geographic range, while L. m. melissa uses many species of host plant. The taxonomic work to elevate L. m. samuelis to the species level was never completed, and the currently accepted status of the Karner blue butterfly is subspecific (Miller and Brown 1983, Nabokov 1943, 1949, Opler 1992, Opler and Krizek 1984, Lane and Weller 1994). While other work has been done on the taxonomy of the Karner blue, the data thus far does not support a change in the classification of the butterfly. (KBB Recovery Plan, pgs. 1 and 2)

The following is a discussion from the Karner Blue Butterfly Recovery Plan (USFWS, 2003) on other butterfly species that are similar in appearance to KBB.

Distinguishing Karner blue from similar species

In the eastern United States, the Karner blue butterfly can be confused readily with the eastern-tailed blue (Everes comyntas) and less readily with the spring azure (Celastrina argiolus) complex (Opler 1992, Scott 1986). Eastern-tailed blues are on average smaller than Karner blue and they have black projections or "tails" on the outer angle of the hind wings (Opler 1992, Scott 1986). These tails may be broken off but usually leave some remnant indicating their former presence. On the underside of the wings, eastern-tailed blues lack orange crescents on the forewing, and four spots, two large and two small, are present on the hind wing (Opler 1992, Scott 1986). It may be difficult to distinguish a large male eastern-tailed blue from a small male Karner blue when they are in flight. Spring azures lack the orange crescents on the undersides of their wings (Opler 1992).

In the Midwest, Karner blue butterflies can be confused with Nabokov's blue (L. idas nabokovi), Melissa blue (L. melissa melissa), eastern- and western-tailed blues (Everes comyntas and E. amyntula), Reakirt's blue (Hemiargus isola), greenish blue (Plebius saepiolus), marine blue (Leptotes marina), acmon blue (Icaricia acmon), spring azure (Celastrina argiolus) complex, and silvery blue (Glaucopsyche lygdamus) (Opler 1992, Scott 1986). Species occurrence varies throughout the Midwest and to determine the species present locally, it is best to consult local guides and checklists. Eastern-tailed blue is the only species that is confused readily with Karner blue. Spring azure, silvery blue, Reakirt's blue, and marine blue lack the orange crescents on the

> *under sides of their wings (Opler 1992, Opler and Krizek 1984, Scott 1986). Eastern- and western-tailed blues have tails (as described above), orange crescents are absent on the underside of the forewing, and there are, respectively, four or one orange spot(s) on the hind wing (fewer than Karner blue). The greenish blue has one or more orange marginal crescents, which are, however, much smaller in size than the spots on Karner blue. The marginal crescents on the dorsal side of the male acmon blue hind wing, tend to be more pink than orange (Opler 1992). Melissa blue can be distinguished from Karner blue by the orange banding on the upper (dorsal) side of the forewing (females only), genitalia differences and differential habitat use (Nabokov 1943, 1949, Scott 1986). Melissa blue larvae can feed on Astragalus sp., Glycyrriza lepidota, Lupinus sp., and several other species (Scott 1986). The occurrence of Melissa blue comes closest (30 miles) to Karner blue sites in southeastern Minnesota. The range of Nabokov's blue, L. idas nabokovi, overlaps with Karner blue in certain areas, but the Karner blue is typically found in oak and pine savanna/barrens, whereas Nabokov's blue is found primarily in forest clearings (Masters 1972). Also, the two species have different host plants. The Karner blue feeds exclusively on wild lupine (Lupinus perennis), and Nabokov's blue feeds on dwarf bilberry (Vaccinium cespitosum) (Nielsen and Ferge 1982). Although there are superficial differences in coloration between these two subspecies (Masters 1972), unequivocal identification would require dissection and examination of the male genitalia (Nabokov 1944). Interested readers should consult the cited references for more details.* (KBB Recovery Plan, pg. 5)

Based on variation in wing pattern and genitalic morphology, the KBB was described as a subspecies of Lycaeides melissa 66 years ago by Vladimir Nabokov in 1944. However, recently, population-genetic evidence has been discovered supporting the conclusion that the KBB is a unique evolutionary lineage and thus should be elevated to that of a distinct species, Lycaeides samuelis (Forister et al. 2011).

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Commenter: Philip Knape

Response:

Comment 43A: We believe that the area that you are referring to in your comment is in the Newaygo Experimental Forest. Much was learned through these projects relating to the contributions that can be expected from the existing seedbank, the need to protect the restoration from encroachment, the quantity of restoration that is reasonable in an area at a given time, and the important roles that site-specific monitoring plays in executing the adaptive management approach. The restoration work in Newaygo is not completed and is included as an upcoming project. This area was discussed in the EA (pg. 3-39):

> *"Efforts are being made to restore savanna in other portions of the State as well. The Forest has initiated savanna restoration in the M37 Project Area and in portions of the Mast Lake Project Area, both in Newaygo County. The Forest also undertook an experimental restoration of pine plantation to dry sand prairie habitat in the Newaygo Experimental Forest. That project has not continued to completion at this point in time, as encroachment of red pine and other factors are contributing to delay in successfully attaining a restoration in the area. Some restoration on non-Forest lands is also occurring through support from The Nature Conservancy."*

The creation or restoration of savanna is not a one step process. The number and type of steps that are required depend on a variety of factors. These include: the amount of trees currently occupying a site, the amount of topsoil that was lost prior to reforestation, the amount and type of seed in the seedbank, the vegetative type of the surrounding areas, and more. Through the

prior restoration efforts made in the Newaygo Experimental Forest and treatments being tested in the demonstration plots within the WRSNA, we acknowledge the challenges that exist in converting or restoring forested areas into healthy non-forested community types. Our intent is not to begin the restoration of the savanna in all of these areas simultaneously, rather in stages, with the initial areas (i.e. demonstration plots) serving to guide what activities would be appropriate in subsequent areas to achieve the desired results. The adaptive management approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another. As the creation and restoration of the savanna community type is progressive, it is not our intent that all of the areas that are included in this project would be complete savannas within a 10-12 year timeframe, rather that these areas would be available for the activities associated with the creation or restoration of savanna, should effectiveness monitoring and the monitoring of the demonstration plots indicate that these actions are appropriate in these areas. If shown to be appropriate, it is anticipated that some level of activity would occur in these areas within the 10 year timeframe.

Comment 43B: We acknowledge your concerns about allowable recreational uses within the Project Area. The effects of this project on the recreational resources were considered in the EA (pages 3-148 through 3-171). The use and enjoyment of public lands for recreation would continue and be encouraged throughout the Project Area. What is proposed to change is a move away from activities that rely on a vehicle to one of self-reliance particularly in the White River Semiprimitive Nonmotorized Area (WRSNA). Providing opportunities for nonmotorized recreation is consistent with Management Area direction and addresses the Purpose and Need of creation/restoration of KBB habitat. The effects of this change in the types of recreational use in the Project Area, especially in the WRSNA, were discussed in the EA:

> "*Those who use the existing road system to recreate would be directly affected by the closing of roads within the [*WRSNA*]. Access within the Project Area by vehicle would be most limited in the WRSNA. Road closures would displace recreationists in the WRSNA, but would provide opportunities for walk-in hiking, backpack camping, hunting, and horseback riding where designated.*" (pg. 3-163)

> "*Implementation of Alternative 2 would create more places of solitude for the non-motorized recreationist. Recreationists who fish, hunt, ride horseback, mountain bike, wilderness camp, and hike will find many opportunities to participate in these activities in the WRSNA portion of this Project Area. These experiences are unique on the National Forest as there are few areas available for this type of experience. Consequently, this alternative would displace those recreationists who are looking for a greater motorized recreational experience; however, county roads in the WRSNA would remain open for this type of experience. The Otto portion of the project area would also provide motorized recreational opportunities.*" (pg. 3-167)

Comment 43C: We acknowledge your hesitant support of Alternative 2.
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Commenter: Krantz
Response:
Comment 44A: We are listening and understand that the National Forests are the public's lands. We are charged with managing these lands for the public which includes not only those living within the Forest's boundaries, but those at the State, regional, and national level. The

activities proposed in the Savanna Ecosystem Restoration Project are not proposed for personal gain. They are to implement the management direction of the Huron-Manistee National Forests Plan and the recovery goals from the Karner Blue Butterfly Recovery Plan for the Muskegon Recovery Unit; both required by law. Closure of U.S. Forest Service roads are proposed in the White River portion of the Project Area but not proposed in the Otto portion under Alternative 2, the Proposed Action Alternative. The status of county roads, open or closed, would not be affected by this project.

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Commenter: Todd Koperski and Rob Kozel

Response:

Comment 45A and 46A: We acknowledge your concerns over having continued access to public lands. No land is being removed from the National Forest System as a result of this project, nor is any land being closed to public use. However, changes would occur in the types of uses, motorized to non-motorized for example, in some portions of the Project Area. Alternatives 2 and 3 propose changes to the existing transportation system that provides motorized access throughout the Project Area. The majority of these changes would occur within the White River Semiprimitive Nonmotorized Area (WRSNA) as shown in Table 3.40: Project Area Road Data (EA, pgs. 3-185 and 186). There would be no changes to the existing county roads in the WRSNA as a result of this project, as these roads are under the jurisdiction of the Oceana Road Commission. While access using the existing U.S. Forest Service Road system would change, a level of motorized access would be maintained in the foreseeable future using the county road system.

Horse use in the Project Area would not be restricted under Alternative 1. Horseback riding would be limited to a designated trail system under Alternative 2 and eliminated under Alternative 3 in the WRSNA. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Access to the North Branch of the White River from the west side of the Project Area would remain unchanged. The open U.S. Forest Service road system is identified on the Motor Vehicle-Use Map (MVUM); available free of charge and updated annually. Within, or immediately adjacent to the Project Area, other river sites accessible by motor vehicle include: Pines Point, Diamond Point, Sischo Bayou, and Podunk. Access sites outside of the Project Area include the M-20 Rest Area, Hesperia, Taylor Bridge, Happy Mohawk, and numerous un-designated sites at road ends. Alternatives 2 and 3 of the Savanna Ecosystem Restoration Project, would establish a parking area at the east end of Winston Road. The South Branch of the White River is accessible a short distance from this site and the access would be considered "walk-in".

As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The Savanna Ecosystem Restoration (SER) Project Area includes the Otto and White River Metapopulation Areas, for which the USFWS identified the following recovery goals:

1) Large viable metapopulations (≥ 6,000 first or second brood adults).

2) Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3) Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4) Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established. The habitat requirements for the Karner blue butterfly are very specific. The general requirements are summarized in the EA (pg. 3-51):

> *"KBB occur in heterogeneous oak/pine savanna/barrens habitats with abundant wild lupine (Lupinus perennis) (the sole food source for the KBB caterpillar), abundant adult nectar sources, warm season grasses for basking and roosting, and ants to protect larvae from parasites and predators (USDI Fish and Wildlife Service 2003). In addition, to maintain persistent metapopulations, dispersal between subpopulations needs to be maintained by connecting subpopulations with corridors and maintaining an average nearest neighbor distance of ≤1 km between subpopulations (USDI Fish and Wildlife Service 2003)."*

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established.

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Commenter: Jerry Lang

Response:

Comment 47A: We acknowledge your support of Alternative 2 and that the activities associated with this alternative would provide habitat benefits for a variety of wildlife species. While no specific measures have been included in this project for reducing deer population levels actions such as fencing nectar plants to reduce the potential for herbivory are proposed. This and other techniques are currently being evaluated in smaller demonstration areas to increase the probability of restoration success and make restoration treatments more efficient and cost effective.

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Commenter: Mark Lewis
Response:
Comment 48A: We acknowledge your support for most of the management activities being proposed in the Savanna Ecosystem Restoration Project.

Comment 48B: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would be permitted in only two circumstances as described in the Environmental Assessment (EA):

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual stump sprouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur. (EA, pgs. 2-4, 3-10, and 25).

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of the EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness (EA, pgs. C-10 and 11).

Risk Assessments have been conducted on all of the herbicides proposed for use in this project and none of these herbicides are considered Restricted-Use. The products included for consideration are the same or similar to those used in such activities as agriculture and the control of undesirable woody vegetation in rights-of-ways. In previous restoration projects on National Forest System lands (i.e. Newaygo Experimental Forest and the White River demonstration plots), monitoring has indicated that physical and mechanical means are simply not enough to control natural regeneration (i.e. stump sprouting) after tree harvesting has occurred. Therefore, the use of herbicides to control woody vegetation has been included for use in the areas where this becomes problematic in the restoration or establishment of savanna. The implementation of this project would occur through adaptive management. While it is not anticipated that the use of herbicides to control the natural regeneration of trees would be necessary in all of the areas proposed for savanna creation/restoration, this is how it has been presented and analyzed. This would account for the maximum that may be necessary to accomplish the project, if other physical (i.e. prescribed burning) or mechanical means (i.e. cutting and stumping) of control prove not to be sufficient in any location. Conservation Measures (EA, Appendix A) have been developed and will be used to ensure the maximum amount of protection is provided to humans and the environment. All applications will follow the legal limits for amount of product applied safely to an area, as established on the product label and following standards regulated by the U.S. Environmental Protection Agency.

Although vegetative management treatments, including herbicide application, may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project Area, the biologists determined that the treatments would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species. (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 may affect, but are not

likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation, including herbicide application, are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71). All determinations were made based on implementation of the conservation measures listed in Appendix A.

Comment 48C: The locations for prescribed burning activities are shown on the Vegetation Management maps at the end of Chapter 2 in the EA. These areas are identified as "Savanna Creation/Opening Restoration" and "Prescribed Burn Only". Burning would occur as a part of the establishment and maintenance of the savanna type and the restoration of existing openings. Burning would also be used as a tool to restore forest health and reduce hazardous fuel types in areas where private property and National Forest System lands are intermixed. While waterways may sometimes be used as control lines in uncontrolled wildland fires, this is not a typical practice when laying out and conducting prescribed burn operations. For this project, all control lines for the prescribed burns would be outside of the river corridor.

Comment 48D: We acknowledge your support for the majority of the proposed road closures and your desire to continue to have motorized access available on FR5306 and FR9353 within the White River Semiprimitive Nonmotorized Area (WRSNA). As stated in the EA (pg. 1-8):

> *"Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring."*

The purpose and need for the road closures in this area is also identified in the EA (pg. 1-9):

> *"Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience."*

Forest Plan standards (S) and guidelines (G) for the WRSNA include:

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.* (Forest Plan, pg. III-6.1-11)	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***

2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of Forest roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine).

Comment 48E: There are no plans to reduce or eliminate backpacking or hiking on any National Forest System lands within the Project Area.

Comment 48F: We acknowledge your appreciation for the National Forest System lands within the Project Area. All of the experiences that you refer to would continue to be available within the Project Area.

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Commenter: Lance Malburg of Oceana County Road Commission

Response:

Comment 49A: We acknowledge your opposition to the road closures that are included as part of the Savanna Ecosystem Restoration Project. As stated in the EA (pg. 1-8):

> "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*"

The purpose and need for the road closures in this area is also identified in the EA (pg. 1-9):

> "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*"

Forest Plan standards (S) and guidelines (G) for the WRSNA include:

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.* (Forest Plan, pg III-6.1-11)	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of Forest roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine).

It was noted that 152nd Avenue at Knutson Creek (within the WRSNA) was closed by the Oceana Road Commission during the planning process for this project.

Comment 49B: The Environmental Assessment (EA) acknowledges that existing roads and trails can provide habitat for the KBB (pg. 3-56):

> *"Some roads and trails within the Project Area provide KBB habitat (i.e., wild lupine and other nectar plants growing along roadsides, or road-rut ponds providing watering areas) and/or dispersal corridors."*

However, other effects to KBB may occur as a result of how and when the roads and trails are utilized, as described in the EA under Alternative 1:

> *"Foot traffic, dispersed camping, horseback riding, and vehicle use along roads and trails and within adjacent openings might damage or disturb KBB habitat (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities). In addition, there would be increased risk of vehicle collisions, visitors directly harming, harassing, or killing KBB (all life stages), illegal collection, and wildfires (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006). Traffic along roads and trails might increase the risk of off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country horseback riding, and dispersed camping, which might adversely affect KBB habitat via soil erosion and compaction, increases in bare ground, reduction in nectar plants, and increases in non-native invasive species (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006). Use of roads and trails that are close to, or pass through, potential or occupied KBB habitat have the greatest potential to have these direct and indirect effects. Thus, maintaining current levels of access and use would likely increase the risk of mortality and reduce habitat quantity and quality for KBB."* (EA, pg. 3-56)

This compares to the effects described for management of the roads and trails under Alternatives 2 and 3:

> *"Recreation and transportation management activities proposed under Alternatives 2 and 3 would have primarily beneficial effects to local KBB subpopulations within the Project Area by reducing the conflicts that would occur between humans and KBB as a result of these activities."* (EA, pg. 3-65)

> *"Off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country travel via foot or horseback, and dispersed camping may increase within areas proposed for savanna creation and KBB opening restoration under Alternatives 2 and 3. Increased recreational use might reduce the quantity and quality of potential and occupied KBB habitat by:*
> 1. *Damaging or disturbing KBB habitat elements (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants, or increasing non-native*

invasive species);
2. *Increasing the risk of vehicle/KBB collisions, visitors directly harming, harassing, or killing KBB (all life stages);*
3. *Temporarily displacing, altering movement, or disrupting normal behavior of KBB (i.e., interfere with dispersal or mating activities);*
4. *Increasing soil disturbance, erosion, compaction, and the amount of bare ground;*
5. *Increasing the risk of illegal collection; and/or*
6. *Wildfires (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006).* (EA, pg. 3-64)

Potential adverse effects from off-road vehicle use "would be minimized with the implementation of the conservation measures outlined for KBB in Appendix A. Signs would be installed within areas proposed for savanna creation and KBB opening restoration treatments explaining the benefits of restoring native plant communities and requesting recreationists to stay on designated roads and trails. If damage from recreational use within treated areas is noted in KBB habitat, public access to managed savannas and openings would be blocked via a variety of methods such as barrier posts or piling brush around the perimeter of treatment areas." (EA, pgs. 3-64 and 65).
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Commenter: Jeanette Marossey
Response:
Comment 50A: We acknowledge your response on the Savanna Ecosystem Restoration Project**.**
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Commenter: Denise McDaniel
Response:
Comment 51A: We acknowledge your support of Alternative 2 (with some additional considerations). The purpose and need of the Savanna Ecosystem Restoration project is not to eliminate recreational use in this area.-Under Alternatives 2 and 3, it would be anticipated that the recreational use within the White River Semiprimitive Nonmotorized Area (WRSNA), for example hunting and camping, would not change but there would be a shift away from motorized to non-motorized access. This is described for Alternative 2 in the Environmental Assessment (EA) (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user(s) to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other locations of public or private land that more satisfactorily accommodates their type of recreational use. This is described for Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

The important function that outdoor recreation has in the Michigan economy is also acknowledged in the EA (pg. 3-212):

> *"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."*

Comment 51B: We acknowledge your concerns of the potential effects that closing FR5295 to horseback riding would have on the resources and riding experiences in this area.-All designated trail systems on National Forest System lands must comply with the U.S. Forest Service Trails and Engineering Handbook and Manuals (FSH 2309.18 and EM-7720-103). Techniques for trail construction and maintenance are detailed in the USDA Trail Construction and Maintenance Notebook, 2007 edition. The techniques take into consideration many factors of trail planning and design, such as the trail corridor, surface water control, the corridor, foundation, tread, stream and river crossings, building trail on slopes, trail signs, tools to use, etc. Also, the designated nonmotorized trail would be within the WRSNA. Within a Semiprimitive Nonmotorized area a user can expect a high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, challenge, and risk.

The non-motorized trail system proposed under Alternative 2, the Proposed Action Alternative, would provide horseback riding opportunities at a variety of difficulty levels offering varied experiences. The trail system would consist of both single-track trail (new construction or improvements to existing trail) and double-track trail (existing roadbeds). This is discussed in the EA (pg. 3-164):

> *"Alternative 2 would provide approximately 12.2 miles of single-track riding and 7.5 miles of double lane riding opportunities where no motor vehicles would be present."*

While the portion of the trail system that is located east of FR5295 would likely appeal to more experienced horseback riders due to the increased difficulty level, other areas of the trail system would accommodate less experienced riders. We acknowledge that the "big loop" may be too far for all riders; however, there are smaller loops (closer to the parking lot) that would allow individual riders the opportunity to select a loop at their skill level or meets their time constraints.

We also acknowledge your concerns about emergency vehicle access within the WRSNA. The U.S. Forest Service roads within the WRSNA that are currently open (seasonally or year round) and that would be closed (year round) under Alternatives 2 and 3 of this project include: FR5306, FR9045, FR5295, FR7992, FR5315, and FR9353. According to *Table 3.41: Alternatives 2 and*

3 Road System Proposals in the White River Portion of the Project Area, all of these roads would be "*closed to motorized vehicles and stored for administrative use*" (EA, pg. 3-195). The "storage" of Forest roads includes the placement of gates that would allow access into remote areas for both administrative and emergency vehicle access. In addition, the existing county roads would remain open in this area. These would include: 148th , 152nd (north of Knutson Creek), 160th, and 168th Avenues, and Winston and Arthur Roads (adjacent) (EA, pg. 3-195). These roads would continue to provide access to emergency vehicles throughout this portion of the Project Area under all of the alternatives.

Comment 51C: Your concerns about the ability to park horse trailers are acknowledged. The site for the parking lot off of Arthur Road that is identified in Alternative 2 was selected for a variety of reasons: 1) it was not located in close proximity to existing Karner blue butterfly habitat; 2) it is centrally located (east and west) across the northern boundary of the WRSNA; 3) it can be accessed by a county road (Arthur); and 4) the existing topography and vegetation would allow for future expansion (if necessary). In addition, other locations on National Forest System lands that are east of the designated parking lot and north of the WRSNA would continue to be available for horse trailer parking. Vehicle parking for hikers, fisherman, hunters, and other recreationists would not be restricted to the designated parking lots, but may be limited at locations where the county road system intersects with areas of National Forest System lands that are occupied with KBB. Area recreationists may also park at the Pines Point day use parking lot.

Currently, the Whiter River and Otto areas each have approximately 38 dispersed camping sites. These sites were inventoried for this project. The results of the inventory for the WRSNA were described in the EA (pg. 3-130), as follows:

> *"Within the White River Metapopulation Area, there were 38 dispersed camping areas identified. The following describes the parameters that were used to determine the existing size of the different sites:*
> *Small (3 sites): ~ 30' x 40' – These sites typically contain enough room to accommodate a passenger vehicle and tent or small pop-up trailer or a truck and small horse trailer for day-use parking.*
> *Medium (16 sites): ~ 40' x 50' – These sites typically contain enough room to accommodate one small RV and a passenger vehicle, one large RV, or one truck and small horse trailer for day use parking.*
> *Large (12 sites): ~ 60' x 80' – These sites typically contain enough room for one large RV and a large horse trailer or a rig that accommodates both horses and living quarters pulled by a full size truck.*
> *X-Large (7 sites): ~ 1 acre – These sites typically contain enough room for several large rigs to camp next to each other. These areas are commonly referred to as group campsites."*

This project proposes to reduce those in the White River area from 38 to 11. Of the 11, there would be 5 medium sites, 3 large sites, and 3 x-large sites available for motorized vehicle-dependent camping within the WRSNA.

The following describes the dispersed camping sites identified in the Otto area (EA, pg. 3-130):

> *"Utilizing the same size parameters identified for the White River Metapopulation Area, the Otto Metapopulation has approximately 19 small sites, 9 medium sites, 7 large sites, and 3 x-large sites."*

There are no proposed changes to the number of dispersed sites in the Otto area as a result of the Savanna Ecosystem Restoration Project. Therefore, when considering the Project Area as a whole, this would leave 19 small sites, 14 medium sites, 10 large sites and 6 x-large sites available for motorized vehicle-dependent camping. Dispersed camping that is not reliant on motorized vehicles would continue to be allowed throughout the Project Area.

The locations selected for designated sites took into consideration the existing types and amount of use of the area and the recreational experience objective, and selected sites that would not likely adversely impact the activities of creation/restoration of savanna for the federally endangered Karner blue butterfly.

Comment 51D: We acknowledge that horseback riding constitutes a form of non-motorized recreation. As such, the use of horses in Semiprimitive Nonmotorized Areas (and across the HMNF in general) has historically been allowed and encouraged. The management of horse use within the WRSNA is due to the presence and necessary protection of the KBB and its habitat. This is discussed in the EA. For Alternative 1:

> *"Foot traffic, dispersed camping, horseback riding, and vehicle use along roads and trails and within adjacent openings might damage or disturb KBB habitat (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities). Traffic along roads and trails might increase the risk of off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country horseback riding, and dispersed camping, which might adversely affect KBB habitat via soil erosion and compaction, increases in bare ground, reduction in nectar plants, and increases in non-native invasive species (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006)."* (EA, pg. 3-56)

For Alternatives 2 and 3:

> *"Off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country travel via foot or horseback, and dispersed camping may increase within areas proposed for savanna creation and KBB opening restoration under Alternatives 2 and 3. Increased recreational use might reduce the quantity and quality of potential and occupied KBB habitat by:*
>
> 1. *Damaging or disturbing KBB habitat elements (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants, or increasing non-native invasive species);*
> 2. *Increasing the risk of vehicle/KBB collisions, visitors directly harming, harassing, or killing KBB (all life stages);*
> 3. *Temporarily displacing, altering movement, or disrupting normal behavior of KBB (i.e., interfere with dispersal or mating activities);*
> 4. *Increasing soil disturbance, erosion, compaction, and the amount of bare ground;*
> 5. *Increasing the risk of illegal collection; and/or*
> 6. *Wildfires (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006)."* (EA, pg. 3-64)

"Cross-country travel for horseback riding and riding along Forest System roads would still be permitted within the Otto Metapopulation Area under Alternatives 2 and 3. In addition, under Alternatives 2 and 3, horseback riding would still occur on county roads that occur within potential or occupied KBB habitat within the White River and Otto Metapopulation Areas.

Because of their relatively large weight and small area in contact with ground, horses have a relatively high potential for environmental damage: more than 20 times the pressure of a man wearing boots and more than twice the pressure by a trail bike or four-wheel drive vehicle (Landsberg, et. al. 2001). Horse use has been shown to result in soil erosion and compaction (Cole and Spildie 1998, Deluca et al. 1998, Campbell and Gibson 2001, Pickering et al. 2009). In addition, horse use has been shown to damage forbs and shrubs via trampling and grazing, and cause defoliation and nutrient enrichment by urination and defecation, reducing plant height and biomass and changing plant species composition along trails (Cole and Spildie 1998, Pickering et al. 2009). Studies also have shown that horses can transport the seeds of non-native invasive species in their manure and thus have the potential to spread invasive species (Campbell and Gibson 2001, Landsberg, et. al. 2001, Cosyns, et. al. 2005, Wells and Lauenroth 2007, Pickering, et. al. 2009, Stroh and Struckhoff 2009, Pickering and Mount 2010). The risk of invasive species establishment is highest when manure is deposited in disturbed, damp sites, especially off-track (Landsberg, et. al. 2001).

In addition to adversely affecting soil and vegetation, horse use has been reported as a contributing factor to the decline of several invertebrate species. Vaughan and Black (2002) reported that within one site occupied by the Taylor's checkspot butterfly, 15-16 horses trampled much of the area containing Indian paintbrush (the larval hostplant) and might have played a role in the extirpation of the Taylor's checkerspot from the site. Development of the Mt. Adams Horse Camp at Bugle Springs in the Gifford Pinchot National Forest was expected to be detrimental to Mardon skippers as a result of trampling by humans and horses, and grazing by horses within Mardon skipper habitat (Black, et. al. 2002). Recreation also has been found to disrupt the normal behavior of KBB and other listed butterfly species, potentially reducing availability of suitable habitat and reducing productivity. Hiking, jogging, and dog walking along trails in occupied KBB habitat at Indiana Dunes National Lakeshore was found to significantly disturb KBB (personnel communication, Dr. Tory Bennett, Oregon State University, May 9, 2010). Post-disturbance female KBBs flew for longer periods of time than male KBBs before returning to natural behavior, such as ovipositing, nectaring, host plant searching behavior and basking (Ibid). Empirical data suggests that if female KBB are frequently disturbed, they select host plants further from trails, essentially degrading the quality of KBB habitat in proximity to trails and reducing the total amount of suitable habitat available to females (Ibid). These results have implications for female KBBs in terms of energy expenditure (potentially impacting their survival and egg production), their oviposition rate (potentially decreasing the number of eggs laid over an individual's flight period), and host plant selection (potentially limiting females from ovipositing on lupines near trails). KBB sensitivity to horse use along trails in occupied habitat would likely be greater than hiking, jogging, and dog walking.

By reducing horseback riding within potential or occupied KBB habitat within the WRSNA as proposed under Alternatives 2 and 3, this non-motorized use would be less likely to trample KBB (all life stages); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities); damage wild lupine or other important nectar plants; reduce presence and productivity of savanna nectar species; increase non-native invasive

species; or increase soil disturbance, erosion, soil compaction, and the amount of bare ground. Requiring removal of horse manure, feed, and hay at the designated day-use parking area and at designated camping areas within the WRSNA also likely would reduce the risk of introducing and spreading non-native invasive species within the Project Area. Allowing for watering horses with buckets at identified permanent water sources is not expected to affect KBB or its habitat, as the watering locations would not occur within potential or occupied KBB habitat.

Horseback riding and its associated impacts (i.e., damaging and reducing wild lupine or other important nectar species, killing or disrupting the behavior of individual KBB, spreading nonnative invasive species, increasing soil disturbance, erosion, compaction, and bare ground) might adversely affect KBB where county roads, Forest System roads, and National Forest System lands remain open to this non-motorized use within potential and occupied KBB habitat. Potential adverse effects from cross-country travel and horseback riding along Forest System roads within potential and occupied KBB habitat in the Otto Metapopulation Area would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A. Signs and barriers would be posted to ensure the public stays on Forest System roads within occupied KBB habitat. If damage from horseback riding is noted within occupied KBB habitat, Forest System roads providing access to damaged occupied sites would be relocated or decommissioned. Signs would be posted to ensure the public stays on roads within unoccupied KBB habitat. If damage from horseback riding is noted within unoccupied KBB habitat, barriers would be installed to ensure the public stays on Forest System roads. Potential adverse effects from county roads that would remain open to horseback riding within potential and occupied KBB habitat in the White River and Otto Metapopulation Areas also would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A.

Overall, recreation management activities proposed under Alternatives 2 and 3 would likely decrease the risk of mortality and improve habitat quantity and quality for KBB within the Project Area. Alternative 3 would reduce potential adverse effects of recreational use to KBB and its habitat more than Alternative 2, given that it proposes a greater reduction in human access and use within potential and occupied KBB habitat. Both Alternatives would meet Forest Plan management objectives for the WRSNA (USDA Forest Service 2006b)." (EA, pgs. 3-66 thru 68)

In addition, House Bill 4610 and Senate Bill 578 (known as the "Right to Ride" bills) do not apply to National Forest System lands.

Comment 51E: We acknowledge your concerns with the activities that are proposed for the management of the KBB in areas that are currently forested. While the types of access in the WRSNA would be modified under Alternatives 2 and 3 (i.e. motor vehicles and horse use), the entire area would remain open for use by the public. The majority of road closures included in this project occur within the WRSNA. As stated in the EA (pg. 1-8):

"*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*"

The need for the road closures in this area is also identified in the EA (pg. 1-9):

"Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience."

The closing of roads within the WRSNA was identified in the Forest Plan in the standards (S) and guideline (G) for Management Area 6.1 (pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

G Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of U.S. Forest Service roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of open land habitats and early successional aspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Thus, the purpose of this project is not to "destroy" forests, rather to provide a habitat that meets the requirements for the Karner blue butterfly and other species that rely on the savanna ecosystem.

To protect the existing populations of KBB, Conservation Measures have been developed and would be adhered to in both occupied and unoccupied sites (EA, pgs. A-5 thru 9). These measures would minimize any negative impacts that would occur on KBB as a result of the proposed management activities, as described in the EA (pg. A-5):

"…conservation measures are designed for the protection, restoration, and maintenance of Karner blue butterfly as they apply to occupied and unoccupied habitat. They will be implemented where Karner blue butterflies or their habitat are documented or found within the Project Area (i.e. currently applies to opening restoration and savanna creation treatment units).

These are from the Final Recovery Plan for the Karner blue butterfly (Lycaeides melissa samuelis) (USDI Fish and Wildlife Service 2003), the Draft Karner Blue Butterfly (Lycaeides melissa samuelis) Habitat Management Strategy for the Huron-Manistee National Forests (USDA Forest Service 2004a), the Biological Opinion on the Programmatic Biological Assessment for the Huron-Manistee National Forests Land and Resource Management Plan (USDI Fish and Wildlife Service 2006), the Programmatic Biological Assessment for the Huron-Manistee National Forests (USDA Forest Service 2006a), and the Forest Plan for the Huron- Manistee National Forests (USDA Forest Service 2006b)."

We acknowledge your concerns about the restoration work that is being carried out in the Newaygo Experimental Forest. The creation or restoration of the savanna and prairie ecosystem type is not a one step process. The number and type of steps that are required depend on a variety of factors. These include: the amount of trees currently occupying a site, the amount of topsoil that was lost prior to reforestation, the amount and type of seed in the seedbank, the vegetative type of the surrounding areas, and more. The projects conducted in the Newaygo area served as the first step in the successful re-establishment of prairie in this area. Much has been learned through these projects relating to the contributions that can be expected from the existing seedbank, the need to protect the restoration from woody encroachment, the quantity of restoration that is reasonable in an area at a given time, and the important roles that site-specific monitoring plays in executing the adaptive management approach. The restoration work in Newaygo is not completed and is included as an upcoming project. The Newaygo area was discussed in the EA (pg. 3-39):

"Efforts are being made to restore savanna in other portions of the State as well. The Forest has initiated savanna restoration in the M-37 Project Area and in portions of the Mast Lake Project Area, both in Newaygo County. The Forest also undertook an experimental restoration of pine plantation to dry sand prairie habitat in the Newaygo Experimental Forest. That project has not continued to completion at this point in time, as encroachment of red pine and other factors are contributing to delay in successfully attaining a restoration in the area. Some restoration on non-Forest lands is also occurring through support from The Nature Conservancy."

Comment 51F: We acknowledge that wildlife contribute to the spread of NNIS. This is identified in the EA.

Relating to autumn olive on page 3-22:

"Originally planted for its perceived benefits to wildlife, it has since spread profusely via bird feces. The Nature Conservancy (Sather and Eckardt 1987) notes that autumn olive has the potential of becoming one of the most troublesome invasive shrubs in the central and eastern United States due to its prolific fruiting, rapid growth, wide dissemination by birds, and its ability to easily adapt to many sites."

Relating to multiflora rose on page 3-23:

"The fruits are highly sought after by birds, with seedlings often being found under bird perch sites."

Relating to the spread of NNIS by deer on page 3-32:

> *"Increased levels of deer grazing would reduce native plant richness while increasing the presence of exotic invasive plants (Seabloom, et. al. 2009)."*

The effects that horses can have on native plant communities are also identified in the EA:

> *"Field surveys within the Project Area indicate that horse use is affecting plant habitat through: erosion of soils in sensitive areas, destruction of vegetative layers in areas frequented by horse camps, and the opening of the soil layer to NNIS establishment. Continued horse use in this area would promote the continuance of new introductions of additional weed, as horses have been documented as retaining seed from feed for 4–10 days and eliminating seed into new areas (Wells and Lauenroth 2007; Pickering and Mount 2010). Horse presence can also cause possible enhancement of growth of non-desirable plant species due to soil chemistry changes from manure loading (Westendorf 2009). Savanna nectar species are particularly noted for their ability to thrive or at least exist in nitrogen poor soils. A number of important savanna nectar species have a nitrogen fixing ability within their root system that gives them a competitive advantage for existing in poor soils. As manure, or fertilizer is added to the soil, that competitive advantage would be lost to other species.*
>
> *Under Alternative 2, horses would be confined to a designated trail within the WRSNA. As a result, the impacts of horses in this area would be much reduced (compared to dispersed horse riding in Alternative 1) as the impacts related to horses are generally the highest in previously untracked areas and lowest on constructed and maintained trails (Landsberg, et. al. 2001). Much of the proposed trail would occur in forested stands. While some impacts may occur from the introduction of weed species by horses or their riders, studies suggest that weed introduction in forested horse trail locations are limited (Campbell and Gibson 2001). Due to the concern regarding weed spread due to horses, however, periodic inspections would be made to determine if an increase in invasive species is developing along the designated trail route."* (EA, pgs. 3-33 and 34)

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Commenter: Jack McGowan-Stinski of the The Nature Conservancy

Response:

Comment 52A: We acknowledge your support for Alternative 2 as the preferred alternative. We appreciate your willingness to provide the U.S. Forest Service and the interested public access to your monitoring data, demonstration sites, and personal comments relating to savanna and barren restoration projects that The Nature Conservancy has participated in. We also appreciate your willingness to provide assistance to the U.S. Forest Service in our planning, monitoring, and implementation efforts.

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Commenter: Clem McLouth

Response:

Comment 53A: We appreciate the information on the lupine growing along the expressway in southern Oceana and northern Muskegon Counties. Lupine is a taproot species and does not transplant well after it has become a mature plant. In addition, the site that you note for lupine is outside of the Project Area boundary.

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Commenter: Christina McVie
Response:
Comment 54A: We acknowledge the information that you have provided on the characteristics, life cycle, habitat requirements, distribution, and status of the Karner blue butterfly. You may be interested to know that a new study might change the status of the Karner blue butterfly. Based on variation in wing pattern and genitalic morphology, the KBB was described as a subspecies of Lycaeides melissa 66 years ago by Vladimir Nabokov in 1944. However, recently, population-genetic evidence has been discovered supporting the conclusion that the KBB is a unique evoluntionary lineage and thus should be elevated to that of a distinct species, Lycaeides samuelis (Forister et al. 2011).

We also acknowledge the information you have provided concerning the cooperative management efforts of the Huron-Manistee National Forests, Michigan Department of Natural Resources and Environment, and non-government organizations within the state of Michigan. Although each of these organizations have individualized strategies for KBB habitat management, enhancement, and protection activities, the collaboration efforts of these partners is essential to the recovery of KBB populations.

Comment 54B: We acknowledge your interest in this project, the management of the National Forest System lands within the Project Area, and the factors that are taken into consideration during the planning of activities on these lands.

Comment 54C: The management of the transportation system under Alternatives 2 and 3 is consistent with the Forest Plan direction and standards (S) and guidelines (G) for the Management Areas that are included within this Project Area (4.4, 6.1, and 9.2) and management activities associated with creating and maintaining habitat for the Karner blue butterfly.
In all Management Areas:

II Provisions for Facilities
A Transportation Facilities
Maximum average of road miles per square mile in all three road classes and average miles of roads per square mile by local, collector and arterial roads are shown in Table II-13. This does not include roads in densely developed areas such as towns, villages and residential development. (FP, pg. II-39) ***G***

Table II-13 of the Forest Plan (pg. II-40) recommends that the densities for all roads within Management Areas 4.4 and 6.1 should be 0-3 and 0-1 miles of road/mi² of land, respectively. There is no recommended density for Management Area 9.2 (Study Wild and Scenic Rivers). The road density calculations (shown on Table 3-40 of the EA) for the Project Area show that both of the action alternatives would meet this Guideline with the exception of *All Roads on All Ownerships in Management Area 6.1* (EA, pgs. 3-185 and 186). The increased density for this calculation is due to the presence of the county road system that would remain.

Management of the transportation system in Management Area 4.4, Rural, the Desired Future Condition is:

> *"The area will provide roads and trails appropriate for motorized and non-motorized uses."* (Forest Plan, pg. III-4.4-3)

Management of the transportation system in Management Area 6.1, Semiprimitive Nonmotorized, the Desired Future Condition is:

> *"Nonmotorized use is emphasized. Closed roads may be evident and some may be utilized as trails."* (Forest Plan, pg. III-6.1-4)

In addition, the guideline for the management of U.S. Forest Service roads in Semiprimitive Nonmotorized Areas includes:

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A. Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. ***G***
(Forest Plan, pg. III-6.1-11)

The proposed management of the transportation system under both Alternatives 2 and 3 would move the National Forest System lands within these Management Areas toward the respective Desired Future Condition, while meeting Forest Plan Standards and Guidelines.

The Forest Plan also offers guidance as it pertains to the management of the transportation system in areas where KBB may occur:

G Karner Blue Butterfly

1. *Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).* ***S***
2. *Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.* ***G***
3. *Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.* ***G***

(Forest Plan, pg II-26)

While both Alternative 2 and 3 would meet this guidance, the EA describes the differences in the effects on KBB between the two alternatives.

> *"The White River Metapopulation Area occurs within the WRSNA. Under Alternatives 2 and 3, all Forest System roads and campsites that currently occur in potential or occupied KBB habitat within the White River Metapopulation Area would be closed. All dispersed motorized camping sites that occur within occupied KBB habitat in the Otto Metapopulation Area also would be closed under Alternatives 2 and 3. However, neither Alternative proposes closing all Forest System roads within the Otto Metapopulation Area. Under Alternative 2, 0.2 miles of Forest*

System roads would be closed to motorized use within occupied KBB habitat in the Otto Metapopulation Area; Forest System roads would still occur on 0.8 acres of occupied KBB habitat. Alternative 3 would reduce human access and use more than Alternative 2 by closing an additional 0.7 miles of Forest System roads that occur within occupied KBB habitat to motorized use, with the exception of seasonal snowmobile use. However, Forest System roads would still occur on 0.3 acres of occupied KBB habitat in the Otto Metapopulation Area under Alternative 3.

By closing roads and dispersed motorized camping sites that occur within potential or occupied KBB habitat, as proposed under Alternatives 2 and 3, human use would be less likely to damage or disturb KBB habitat (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities); or result in vehicle/KBB collisions, visitors directly harming, harassing, or killing KBB (all life stages), illegal collection, and wildfires. Reduced traffic along roads also would likely decrease the risk of off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles) and cross-country travel, which might adversely affect KBB habitat via soil erosion and compaction, increases in bare ground, reduction in nectar plants, and increases in non-native invasive species. Roads and trails that border savanna creation and KBB opening restoration treatments would likely experience an increase in nectar plant availability, increasing the quality and quantity of KBB dispersal corridors within the Project Area.

Human use and its associated impacts (i.e., damaging wild lupine or other habitat elements, killing or disrupting the behavior of individual KBB, spreading non-native invasive species, soil disturbance or compaction) might adversely affect KBB where county roads and Forest System roads remain open to motorized use within potential and occupied KBB habitat. Potential adverse effects from Forest System roads that would remain open within KBB habitat would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A. Signs and barriers would be installed along all Forest System roads that would still occur within occupied KBB habitat, to prevent off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles) and dispersed camping. If Forest System roads and their associated uses are found to adversely impact KBB or its habitat, they would be relocated or decommissioned. Potential adverse effects from county roads that would remain open to motorized use within potential and occupied KBB habitat in the White River and Otto Metapopulation Area also would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A." (EA, pgs. 3-55 and 56)

Comment 54D: The rationale for combining horses, bikes, and pedestrians on a non-motorized trail system is also related to Forest Plan guidance. Forest Plan objectives for the White River Semiprimitive Nonmotorized Area (WRSNA) are incorporated as part of the purpose and need for this project (EA, pg. 1-6).

Purpose: *Management activities in these areas provide semiprimitive, nonmotorized recreational experiences and will reduce life threatening and property-damaging wildfire potential. Management enhances and improves habitats for species which avoid human activity. Specifically, the objectives within the Forest Plan for the SPNMA include: Provide primitive canoeing, fishing, and camping areas; develop a non-motorized trail system; and use trail*

corridors to improve potential or connect occupied Karner blue butterfly habitat (Forest Plan, pgs. III-6.1-2 and 3).

Through the processes of scoping and Interdisciplinary field reviews of the Project Area, the increase in use of the WRSNA by horses is evident. This was identified in the EA (pg. 3-149):

> *"In the last ten years, use by horseback riders in the WRSNA has steadily increased and signs of that use are evident throughout the area. Currently, there is moderate use of the area by horseback riders (mostly on weekends) involving both trail riding and overnight camping. Organized rides that attract larger groups of riders are becoming more common."*

However, a variety of other forms of recreation in this area were also identified (EA, pg. 3-149):

> *"Some of the recreational uses of National Forest System land that occur include: hunting for deer, bear, turkey, small game, and grouse; fishing; gathering forest products; driving for pleasure; camping; observing wildlife; hiking; horseback riding; mountain biking; canoeing; boating; kayaking; tubing; and snowshoeing and cross-country skiing in the winter."*

A multiple-use non-motorized trail system would accommodate the variety of uses present and anticipated, while still meeting the Forest Plan guidelines provided in our response to 54C. The effects on NNIS, soils, plants, and animals related to motor vehicles and horses are discussed in various portions of the EA including, but not limited to, pages 3-9, 10, 12-14, 33, 34, 39, 53, 56, 64-68, 73, 75, 76, 78, 82-85, 87, 88, 92, 93, 95, 96, 98, 99 133-135, 137-141, 146, and 147. In addition, Conservation Measures have been included in Appendix A to provide additional protection to these resources.

Comment 54E: The range of alternatives included in this project resulted from a combination of Forest Plan direction, Interdisciplinary Team interaction, and public involvement. This is described in the EA (pg. 2-1):

> *"The regulations of the National Environmental Policy Act (NEPA) mandate consideration of all reasonable alternatives for a proposed action, including the identification and discussion of alternatives eliminated from detailed study. To develop alternatives, the ID Team reviewed the comments and concerns expressed by the public and internal sources during the scoping process. This was done by analyzing the comments received, grouping like comments, and placing them in the following categories: 1) those that were substantive, 2) those that could be addressed in the discussion of effects, 3) those that could be addressed through mitigation, 4) those that were beyond the scope of this document, and 5) those which should be considered for inclusion into an alternative. The issues identified for possible inclusion in an alternative were then reviewed to determine if they related to the Purpose and Need. Those not directly relating to the Purpose and Need of the project were eliminated from further analysis. The ID Team also identified indicators or measurements used to compare how each alternative responds to the issue for which it was developed."*
>
> *"A modified version of the original proposed action and one other action alternative have been developed to meet the objectives and to address and resolve the identified issues. Each alternative represents a site-specific mix of proposals that responds to these issues. In addition, the team utilizes a baseline alternative (termed the No-Action Alternative) which serves to represent the*

consequences of implementing no management activities in this area at this time. From this range of alternatives, the District Ranger has a basis for determining the trade-offs between implementing the alternatives, including the No-Action Alternative."

The activities and applicable Conservation Measures associated with both Alternatives 2 and 3 would meet the Purpose and Need for this project, but offer differences (see Table 2.1) that respond to the issues identified during scoping. As stated in the EA, there are trade-offs associated with these differences for the Decision Maker to consider.

Comment 54F: Implementation of the activities proposed in either Alternative 2 or 3 would not have a negative impact on the attributes for which the White River is considered for inclusion in the Wild and Scenic River System (Forest Plan, pg. III-9.2-1).

We assume in your comment that the "incursions that create edge effect" refers to the designation of a non-motorized trail in this area. In 1988, the White Cloud District of the Huron-Manistee National Forests completed the White River Opportunity Area Analysis (OA). An identified need and project was the development of 17 miles of hiking/cross-country ski trail. While initial efforts were made to develop a trail along the South Branch of the White River, the trail was never formally designated and little to no effort was made to maintain it to standard. Since this time, the use of the area (and more specifically this trail) by horses has increased. The trail was not developed, nor has it been maintained, for the existing types and numbers of users (i.e. horses). Development and designation of a nonmotorized trail near or within the Study Wild and Scenic River Corridor would utilize U.S. Forest Service trail standards and be consistent with providing users with a semi-primitive non-motorized experience and would protect the attributes of the White River (Forest Plan, pg. III-9.2-1).

Comment 54G: We acknowledge your support of Alternative 3 as the preferred alternative.
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Commenter: Dave Miehlke
Response: Comments 55A thru 55E were originally submitted on October 12, 2010 and responded to on October 18, 2010. Any additions to the original responses are noted in italics.

Comment 55A: I believe you are referring to the addition of Section 7 in Blue Lake Township, Muskegon County. This is the only Section that differs between the Initial Scoping Letter and the Environmental Assessment. This was added as part of the Project Area for the Environmental Assessment because portions of this section are within the Forest Compartments that make up the Project Area. No management activities are proposed in this Section, but the area was included in the analysis of environmental effects for this project.

Comment 55B: Seventy-four miles of the White River is currently managed in Management Area 9.2 – Study Wild and Scenic Rivers until the evaluation to determine its eligibility for inclusion in the Wild and Scenic River System is completed. The proposed classification for the White is "recreational." Until funds are available to complete the evaluation the standards and guidelines for MA 9.2 will protect the unique characteristics for which the White River was identified for inclusion in the national system.

Comment 55C: The MVUM reflects the current transportation system based on decisions to date. To make changes we are required to complete an analysis under the National Environmental Policy Act. The Savanna Ecosystem Restoration Environmental Assessment is such an analysis and proposes actions that will affect the area's transportation system.

Comment 55D: The U.S. Department of Justice is still reviewing the opinion issued by the court. *The Huron-Manistee National Forests is currently in the process of preparing a Supplemental Environmental Impact Statement related to this.*

Comment 55E: The rationale for the management of the area's transportation system is the designation of this area as semiprimitive, nonmotorized. This designation occurred with the 1986 Forest Plan. This designation was retained with the 2006 Forest Plan. The goal of this designation is an area characterized by a predominantly natural or natural-appearing environment.

Comment 55F was originally submitted and responded to on October 22, 2010. Any additions to the original response are noted in italics.

Comment 55F: Our regulations do not permit extension of the comment period. 36 CFR215.6(a)(iv) "The time period for the opportunity to comment on Environmental Assessments shall not be extended." The time period for the Savanna Ecosystem Restoration project is set at 30 days following the date of publication in the newspaper of record, the Lake County Star.

We have submitted our 2010 survey data to the MDNRE who compiles population data for the entire State across all ownerships. The 2010 population data that you have requested will be available in December and will be made available as soon as we have the information. *The Baldwin-White Cloud Ranger District is working with the MDNRE on the analysis of the 2010 data, so the results are not yet available. When complete, the results will be summarized in the "2010 USFWS Monitoring Report for HMNF KBB".*

Comments 55G thru 5BB were originally submitted on February 26, 2010 and responded to on March 22, 2010. Any additions to the original responses are noted in italics.

Comment 55G: Your support for the preparation of an EIS for the Savanna Ecosystem Restoration Project is noted. The preparation of an EIS is determined by the identification of significant impact resulting from proposed activities. Prior to this determination, an Environmental Assessment will be prepared for the Savanna Ecosystem Restoration project. Upon completion, there will be a 30-Day Comment Period. If significant impacts are not identified through this process then a Decision Notice and Finding of No Significant Impact will be prepared and sent out to those who commented during the 30-Day Comment Period. If significant impacts are identified during or after the period of analysis, the Deciding Official can initiate the preparation of an Environmental Impact Statement.

Comment 55H: The Karner blue butterfly was listed as endangered in 1992 and the Recovery Plan was completed in 2003. Both of these actions occurred well after the preparation of the

1986 Forest Plan. One of the objectives for the 2006 update of the Forest Plan was to address new issues and incorporate new information. One result of this objective was the addition of habitat and population objectives for the federally endangered Karner blue butterfly. On page II-32 of the HMNF Land and Resource Management Plan (2006) it states: "Habitat and Population Objectives: habitat and population objectives follow recommendations of the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or as updated). Three large viable populations-6,000 butterflies, and one viable population 3,000 butterflies, will be established and maintained on the Manistee National Forest. As such, 20,300 acres (4% of the Manistee National Forest) of barrens habitat will be developed and maintained in the four metapopulation areas and the essential Karner blue butterfly barren habitat on the Manistee National Forest." The restoration activities that are proposed in the Savanna Ecosystem Restoration Project are in accordance with this objective.

In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of openland habitats and early successionalaspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, red-headed woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Thus, this project would provide habitat that meets the requirements for the Karner blue butterfly and other species that rely on the savanna ecosystem.

Comment 55I: *Your* comments *are* noted.

Comment 55J: The cost and the land mass that is devoted to the recovery of an Endangered, Threatened, or Sensitive species varies by the species and is dependent on the existing population status, the habitat needed, and the existing condition of that habitat. Management activities for ETS species on the HMNF are developed and carried out to meet the intent of the Endangered Species Act within available funding levels. Management activities in support of ETS species are prioritized above other activities within the wildlife *program* funding.

Comment 55K: In the event that the KBB is extirpated, consideration would be given to captive breeding in support of a re-introduction program. *Captive rearing may be used in translocation and reintroduction efforts when the habitats and Karner blue numbers in RUs have declined to the point that the butterfly's persistence is very precarious. "In these cases, actions such as accelerated colonization to expand the metapopulation and population augmentation to boost butterfly numbers may be required to prevent metapopulation decline. These tools may be useful for speeding recovery in a metapopulation, by increasing metapopulation densities and accelerating dispersal faster than might otherwise occur. Reintroductions to historic habitat are necessary in some RUs to re-establish metapopulations that have been extirpated." Captive rearing, translocation, and reintroduction efforts would follow the protocols and guidelines outlined in the USFWS Final Karner Blue Butterfly Recovery Plan (pgs. 88-89, USDI Fish and Wildlife Service 2003).*

Comment 55L: *Your* comment *is* noted.

Comment 55M: In addition to the "KBB Status Update" and the "KBB 2010" PowerPoint presentation that were provided to you on 03/08/10, I have included a copy of the Karner Blue

Butterfly Monitoring Report for 2009. Please reference Appendix A of this report regarding the methodology of data collection.

Comment 55N: The number of individual KBB needed to represent a *minimum* viable *meta*population is ≥3,000 *first or second brood adults*. The number of individual KBB needed to represent a large viable *meta*population is ≥6,000 *for or second brood adults*. The desired future condition of the Otto and White River Metapopulation Areas is that each contain ≥6,000 individual KBB, as counted annually during the second flight.

Comment 55O: The most up to date and detailed map of the West Shore Snowmobile Trail is available for purchase through the West Shore Snowmobile Council at the Muskegon County Convention and Visitors Bureau and at businesses located near the trail system. A scanned version of a file map for the trail within the Project Area will be sent to you electronically. The grant sponsors contact persons include:

Oscar Reed – President of West Shore Snowmobile Council
2440 Wisconsin Avenue
Muskegon, MI, 49445

The West Shore Snowmobile Trail is not under permit; rather it is part of a Challenge Cost-Share Agreement which has been in place since at least the early 1980s.

Comment 55P: The USFS and the USFWS work cooperatively on recovery efforts for the KBB. The USFS is the lead agency for the KBB recovery efforts that take place on National Forest System lands. The USFWS is consulted on all activities that are proposed on National Forest System lands that may impact ETS species, as required by the Endangered Species Act.

Comment 55Q: U.S. Forest Service direction on the scoping process is presented in Forest Service Handbook 1909.15 – National Environmental Policy Act Handbook – Chapter 10. For more general guidance, you may also refer to 40 CFR 1501.7 or 36 CFR 220.4(e).

For the Savanna Ecosystem Restoration Project, approximately 1,011 scoping letters were mailed out to those who have indicated an interest in all of the activities that are proposed to occur on the HMNF and to landowners with property adjacent to the Project Area. A scoping advertisement ran in the Oceana Herald Journal on December 10, 2009. In addition the scoping letter *and EA were* posted electronically on the HMNF website and *were* included on the HMNF Schedule of Proposed Activities (SOPA). *Also, a legal notice for the EA was posted in the Lake County Star newspaper.* Through the combination of these efforts, we have adequately met the necessary scoping requirements for a project of this size and scope.

Comment 55R: *We acknowledge the information that you sent regarding horses as a potential vector for the spread of NNIS. The spread of NNIS related to horse manure was discussed in the EA (pgs. 3-33, 34, 66, 67, 75, 76, 84, 92, 93, 99, 139, 164, 166). The following references were used to prepare the effects discussion in the EA:*

Campbell, J.D., D.J. Gibson. 2001. The Effect of Seeds on Exotic Species Transported via Horse Dung on Vegetation Along Trail Corridors. Plant Ecology. 157:23-51.

Landsberg, J., B. Logan, and D. Shorthouse. 2001. Horse Riding in Urban Conservation Areas: Reviewing Scientific Evidence to Guide Management. Ecological Management and Restoration. 2(1): 36-46.

Pickering, C.M., and A. Mount. 2010. Do Tourists Disperse Weed Seed? A Global Review of Unintentional Human-Mediated Terrestrial Seed Dispersal on Clothing, Vehicles, and Horses. Journal of Sustainable Tourism. 18(2):239-256.

Wells, F.H., W.K. Lauenroth. 2007. The Potential for Horses to Disperse Alien Plants along Recreational Trails. Range and Ecological Management. 60:574-577.

Westendorf, M. 2009. Horses and Manure. Fact Sheet FS036. Rutgers University, New Brunswick.

Cole, D. N., D.R. Spildie. 1998. Hiker, Horse and Llama Trampling Effects on Native Vegetation in Montana, USA. J Environ. Manage. 53: 61-71.

Deluca, T.H., W.A. Patterson, W.A. Freimund, D.N. Cole. 1998. Influence of Llamas, Horses, and Hikers on Soil Erosion from Established Recreation Trails in Western Montana, USA. Environ. Management. 22: 255-262.

Pickering, C.M., W. Hill, D. Newsom, Y.F. Leung. 2009. Comparing Hiking, Mountain Biking and Horse Riding Impacts on Vegetation and Soils in Australia and the United States of America. J. Environmental Management xxx: 1 – 12.

One of the objectives identified in the Forest Plan (pg. III-6.1-3) for the White River Semiprimitive Nonmotorized Area was to "develop a nonmotorized trail system". We recognize that conflicts can occur between user-groups on multiple-use trail systems (EA, pg. 3-199):

> *"As the Forest Service roads would be closed off to motorized vehicles, there would not be conflicts between horses and motor vehicles on these roads under Alternative 2. These conflicts would still occur on the county road system, especially as both user groups would be concentrated. User-conflicts would also exist on the portions of the non-motorized trail system that occurs on the closed Forest Roads where mixed recreational use would be promoted. These conflicts would include horseback riders, hikers, and bikers. Without mitigating actions, there would be locations where the tread (resulting from horse use) and manure would make the designated trail in these locations difficult and/or unappealing for the other user groups."*

The design for the trail system included in this project was developed based on the responses to the Public Scoping Letter by the various recreational user-groups. The responses to this letter indicated that the primary existing nonmotorized recreational use in this area was horseback riding and, as a result, the amount of conflict related to combining uses on the proposed nonmotorized trail system would be minimal.

Comment 55S: The Holton-Horseshoe Trail system is not within the Project Area for the Savanna Ecosystem Restoration Project. Projects in the vicinity of this trail system may occur in the future, but these projects have not yet been identified.

Comment 55T: The USFWS is responsible for determining the critical habitat for Endangered and Threatened species. The amount of area involved in the establishment of critical habitat varies by the habitat requirements for that species. For some species (i.e. the piping plover), the critical habitat may be comparatively small. For the KBB, recovery efforts target the Metapopulation Areas, though these are not considered critical habitat.

Comment 55U: There is no mandate with special funding for the activities associated with the recovery of the KBB or other endangered species. Activities associated with the recovery of the KBB are funded through federal allocations, partnership agreements, and grants.

Comment 55V: Establishing a species as a Threatened or Endangered species is done through the USFWS. *Under the Endangered Species Act (1973), the Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction.*

Comment 55W: Public meetings were held for the 2006 Forest Plan revision, which included the Standards and Guidelines, habitat requirements, and population objectives for the Karner blue butterfly. In addition, the District has done numerous presentations on savanna barrens restoration and Karner blue butterfly for a variety of groups, including high school and college students.

Comment 55X: *We believe this project to be non-discriminatory per the USDA Non-discrimination statement:*

"The US Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audio tape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue SW, Washington DC, 20250-9410, or call (800) 795-3272 (Voice) or (202) 720-6382 (TDD). USDA Forest Service is an equal opportunity provider and employer."

Comment 55Y: No. Permits for private property are handled through the Michigan Department of Natural Resources and Environment. *Property owners and the general public are not required to apply for and obtain incidental take permits when recreating on National Forest System lands, unless the recreation activities exceed the allowable group size or it is organized event.*

Comment 55Z: Forest Closure Orders are appropriate and potential tools for the management of Threatened and Endangered Species.

Comment 55AA: Comment noted. *The three alternatives considered in this project provide for varying levels of recreational access.*

Comment 55BB: Comment noted.

Comments 55CC thru 55DD were originally submitted on August 21, 2010.

Comment 55CC: We acknowledge that you feel the National Forest signage in this area is inadequate and not up to U.S. Forest Service standards. U.S. Forest Service policy regarding signs and posters is contained in *Forest Service Manual 7100, Chapter 7160 Signs and Posters*. The Manual on Uniform Traffic Control Devices (MUTCD) is the national standard for signs, markings, pavement markings, and other devices used to control traffic (traffic control devices) on all roads open to public travel. The U.S. Forest Service is required by 23 CFR 655.603 to adopt each addition of the MUTCD within 2 years of that edition becoming final through publication in the *Federal Register.* Traffic control devices shall be constructed, located, installed, and maintained according to the standards contained in the MUTCD.

Although the signage in the Pines Point/White River Area is old and is in need of replacement, the number and size of signs is adequate to guide users to the recreational facilities. We are working with our concessionaire at the Pines Point Campground to replace all the directional signing to the site in the next several years. We will replace the directional signing to the WRSNA as funding becomes available.

Information/portal signs occur within the Project Area on the higher-used roads of the northern boundary of the WRSNA. The intended use of these signs is to be able to provide users of the area with information that they may find helpful or educational (i.e. maps, regulations, upcoming projects, etc.) as they enter into the area. These signs do not have to follow the same standards as regulatory and directional signing to recreation sites. We try to include information on these signs that users will find helpful and that will contribute to a safe recreational experience while in the area.

Comment 55DD: We acknowledge your opposition to road closures that are proposed in this project. The majority of road closures included in this project occur within the WRSNA. As stated in the EA (pg 1-8): "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*" The need for the road closures in this area is also identified in the EA (pg. 1-9): "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*" The closing of roads within the WRSNA was identified in the Forest Plan standards (S) and guidelines (G) for Management Area 6.1(pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

G Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***

2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of Forest roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). Site-specific projects do allow for the review of the MVUM within the Project Area. This includes the Savanna Ecosystem Restoration project. As a result of this review, Alternatives 2 and 3 of this project include the addition of a portion of FR9320 (0.8 miles) to the Motor Vehicle Use Map (EA, pgs. 2-3 and 4).

Comments 55EE thru 55LL were originally submitted on March 15, 2010 and responded to on March 22, 2010. Any additions to the original responses are noted in italics.

Comment 55EE: The data gathered on the 15 acre plot, 3 miles northeast of the Brohman MPA, is on private land. The contact person for all survey counts is:

Heather Keough
Baldwin-White Cloud Ranger District
650 North Michigan Avenue
P.O. Box Drawer D
Baldwin, MI, 49304
Phone: 231-745-4631x3111
Email: hkeough@fs.fed.us

Comment 55FF: The Hayes site is considered to be an isolated subpopulation. It is not considered to be a part of any of the Metapopulation Areas identified in the Recovery Plan. As a result, the data collected on this site are not determining factors on meeting the recovery goals for these Metapopulation Areas, nor are they used in a comparative statistical analysis between the Metapopulation Areas.

Comment 55GG: Consideration will be given to the declining numbers of KBB in the forthcoming analysis for the Savanna Ecosystem Restoration Project.

The Forest believes that the following factors might be responsible for apparent KBB declines in the four metapopulation areas (BA/BE, pgs. 47 and 48; USDA Forest Service 2006a, USDA Forest Service 2009a):

- *Habitat loss due to natural succession is continuing at the same level, despite past treatments that have attempted to prevent woody encroachment into suitable KBB habitat. The number of acres of suitable KBB habitat experiencing woody encroachment is greater than the number of acres of suitable KBB habitat treated annually.*
- *Deer browsing of wild lupine, which might reduce KBB larval survival, is increasing within suitable KBB habitat.*

- *Weather conditions have shifted between drought conditions and very wet and cold springs and summers, with several spring frosts. As a result, availability of wild lupine and other important nectar plants has decreased within suitable KBB habitat. In addition, these conditions likely decreased over-winter survival of KBB eggs.*
- *Topography of these units, with low depressional areas, increases the occurrence of growing-season frost pockets that might damage wild lupine and other nectar plants.*
- *Vehicle/ORV use and dispersed camping within suitable KBB habitat is declining in some metapopulation areas due to road closures implemented under the Forest Plan's management direction for the White River Semi-Primitive Nonmotorized Area, and camp site closures in occupied KBB habitat that have been implemented under Forest Plan Standards and Guidelines (USDA Forest Service 2006b). However, vehicle/ORV use and dispersed camping still occurs within suitable KBB habitat and might kill KBB and/or damage wild lupine and other important nectar plants.*

Given that the Karner blue butterfly population within the HMNF is declining, timely and effective management to restore, enhance, protect, and maintain suitable KBB habitat is essential.

KBB opening restoration and savanna creation under Alternatives 2 and 3 are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pg. 58).

Comment 55HH: Members of the IDT for the Savanna Ecosystem Restoration Project include the following:

Heather Keough – Wildlife Biologist
Matt Sands – Silviculturist
Kathy Bietau – Recreation
Mark Shermak – Forester
Russell Snyder – Archeologist
Chris Riley – Fisheries Biologist
Steve Hatting – Fire/Fuels
Patricia Ruta-McGhan – Botanist
Christopher Frederick – Interdisciplinary Planner (Team Leader)

Other District staff may be asked to provide resource-specific information or assistance relating to this Project.

Comment 55II: A copy of the Biological Opinion for the Huron-Manistee National Forests Land and Resource Management Plan (2006) and the Biological Assessment for Huron-Manistee National Forests Environmental Impact Statement and Forest Plan (2006) have been sent to you electronically (due to the size of the documents). If you have any difficulties in accessing these documents, please let me know and a hard copy can be provided. *See also, our response to 55K.*

Comment 55JJ: The Savannah Ecosystem Restoration Project activities occur only *on* National Forest System Lands and call for actions within Agency Jurisdiction, and do not modify, create

or violate national policy and regulation nor does it alter the relationship between the State and Federal Governments, nor the distribution of power between the various levels of government. Therefore, there are no Federalism implications of this project. This project implements the approved Forest Plan and complies with associated laws, regulations and policy.

The Intergovernmental review contact (SE Michigan Council of Governments) per EO 12372 was informed of this project and is on the Forest-wide mailing list.

Comment 55KK: *Your preference of Alternative 1, unless an EIS is completed, is noted.*

Comment 55LL: Comment noted.

Comments 55MM thru 55CCC were originally submitted on April 26, 2010 and responded to on May 17, 2010. Any additions to the original responses are noted in italics.

Comment 55MM: It is noted that you do not support the use of the United States Fish and Wildlife Service's Karner Blue Butterfly Recovery Plan as a blueprint for the Huron-Manistee National Forests Draft Karner Blue Butterfly Strategy. The Savanna Ecosystem Restoration Project is a site-specific project that is tiered to the existing and applicable Forest, interagency, and programmatic plans that have been approved and are in place. Therefore, your concerns are beyond the scope of this project.

Comment 55NN: On page II-32 of the HMNF Land and Resource Management Plan (2006) it states: "Habitat and Population Objectives: habitat and population objectives follow recommendations of the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or as updated). Three large viable populations (6,000 butterflies), and one viable population (3,000 butterflies), will be established and maintained on the Manistee National Forest. As such, 20,300 acres (4% of the Manistee National Forest) of barrens habitat will be developed and maintained in the four metapopulation areas and the essential Karner blue butterfly barren habitat on the Manistee National Forest." The restoration activities that are proposed in the Savanna Ecosystem Restoration Project are in accordance with this objective.

Comment 55OO: The development and updating of Recovery Plans for endangered species is the responsibility of the United States Fish and Wildlife Service (USFWS) with input from the species-specific Recovery Team. The U.S. Forest Service utilizes these plans for guidance in the development and maintenance of habitat in support of the recovery of the species. Recovery Plans for endangered species are periodically reviewed and updated by the Recovery Team.

The objective of the USFWS Final Karner Blue Butterfly Recovery Plan is "to perpetuate viable metapopulations (VPs) and large viable metapopulations (LPs) of the Karner blue butterfly in the major physiographic, vegetational and climatic regions, henceforth called "recovery units" (refer to APPENDIX B, Figures B1-B4) throughout the range of the butterfly. This would allow reclassification and ultimately removal of this species from the Federal list of "Endangered and Threatened Wildlife and Plants" (50 CFR 17.11 and 17.12). The Karner blue butterfly may be considered for reclassification to threatened status and ultimately delisting when the recovery criteria outlined below are met. It is estimated that full recovery of the species will take about 20 years."(page 56 of the USFWS KBB Recovery Plan, USDI Fish and Wildlife Service 2003).

Comment 55PP: Your concerns relating to the development of the 1986 and 2006 Forest Plans and the process for the designation of Semiprimitive Nonmotorized Areas are noted. Comments on these plans were accepted during the development of each plan, respectively, according to the NEPA process. The time period for utilizing comments in the development of these plans has expired. Therefore, while your comments are noted, they are beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 55QQ: Your concerns relating to the development of the 1986 and 2006 Forest Plans are noted. Comments on these plans were accepted during the development of each plan, respectively, according to the NEPA process. The time period for utilizing comments in the development of these plans has expired. Therefore, while your comments are noted, they are beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 55RR: In response to comments that you submitted on March 15, 2010, you were sent a packet of information which included the Karner Blue Butterfly Monitoring Report 2009. Appendix A of this report describes the scientific methodology associated with the survey efforts for the Karner Blue Butterfly. Your comments on global warming are noted. *Climate change is considered in the Air Resources portion of the EA (beginning on page 3-111).*

Comment 55SS: In the event that the KBB is extirpated, consideration would be given to captive breeding in support of a re-introduction program. *Captive rearing may be used in translocation and reintroduction efforts when the habitats and Karner blue numbers in RUs have declined to the point that the butterfly's persistence is very precarious. "In these cases, actions such as accelerated colonization to expand the metapopulation and population augmentation to boost butterfly numbers may be required to prevent metapopulation decline. These tools may be useful for speeding recovery in a metapopulation, by increasing metapopulation densities and accelerating dispersal faster than might otherwise occur. Reintroductions to historic habitat are necessary in some RUs to re-establish metapopulations that have been extirpated." Captive rearing, translocation, and reintroduction efforts would follow the protocols and guidelines outlined in the USFWS Final Karner Blue Butterfly Recovery Plan (pages 88-89, USDI Fish and Wildlife Service 2003).*

Comment 55TT: The Huron-Manistee National Forests received 8.5 million dollars from stimulus funds under the ARRA program. These funds are being used for a variety of natural resource projects across the forest. These funds support the creation of local jobs, contract work, and the purchase of materials and supplies to accomplish project activities. The authorization to spend these funds runs through FY2015.

More specifically, the Baldwin-White Cloud District was allocated 1.5 million dollars to complete a variety of projects including: road stream crossings, campground facility maintenance/upgrades, stewardship projects in the White River area, FIREWISE programs, and timber marking.

Comment 55UU: The U.S. Forest Service is currently involved with the planning and design for new administrative buildings to replace the current facility at Baldwin. This new facility would be constructed on the site of the current administrative complex. Funding for this project is part of the normal U.S. Forest Service capital investment program and involves no funding from the ARRA program.

Currently the Baldwin/White Cloud Ranger District employees 27 full time employees. This workforce is supplemented during the summer field season by temporary employees, detailers brought in from other units, volunteers, and interns. The number of temporary workers is dependent on annual project needs and available funding. The new facility is designed to accommodate this seasonal staffing need. All of our staff is involved in important work which benefits our community and moves the National Forest towards the desired Forest Plan goals.

Comment 55VV: If the district is able to construct temporary housing, this will be used to support temporary employees and volunteers involved with our management activities.

Comment 55WW: Members of the district planning staff are available to meet with you on site to review areas of concern. Please let us know a range of dates you would be available to meet.

Comment 55XX: The district staff has been and will continue to be available to meet with folks interested in this project.

Comment 55YY: Please see the attached map outlining areas in the White River/Otto area which are open to firewood cutting. You are already in receipt of all the map coverage outlining the information requested in your 5/3/2010 letter. The District has no better information and will not be creating new larger scale map coverage. We do have USGS Quad maps which cover the project area. They are available at the district office for $8.00 per sheet. We also have copies of the district transportation system (MVUM), free of charge. All U.S. Forest Service roads, open to public travel, are shown on the MVUM. Site-specific treatment maps will also be included with the forthcoming analysis for this project.

Comment 55ZZ: The effects of horse use within the Savanna Ecosystem Restoration Project Area will be addressed in the forthcoming environmental analysis. *Currently, horses are allowed to travel cross-county on USFS lands, providing they do not cause resource damage. One of the possible outcomes of the White River/Otto project would be to eliminate cross-country travel by horses and restrict them to a designated trail system. The Pigeon River lawsuit, House Bill 4610, and Senate Bill 578 (also known as the "Right to Ride" bills) only pertain to land that is managed by the State of Michigan and has no impact to National Forest System Lands. There are currently no fees charged for horseback riding on the Huron-Manistee National Forests. Some trailhead parking areas on the Forest may charge a Recreation Enhancement Fee (REA). The WRSNA charges no fees for horseback riding and also does not charge a REA fee for parking.*

The potential effects of horse use on KBB habitat and populations within the Project Area are discussed in the EA. For Alternative 1:

> *"Foot traffic, dispersed camping, horseback riding, and vehicle use along roads and trails and within adjacent openings might damage or disturb KBB habitat (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities). Traffic along roads and trails might increase the risk of off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country horseback riding, and dispersed camping, which might adversely affect KBB habitat via soil erosion and compaction, increases in bare ground, reduction in nectar plants, and increases in non-native invasive species (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006)." (EA, pg. 3-56)*

For Alternatives 2 and 3:

"Off-road vehicle use (i.e., all terrain vehicles, dirt bikes, snowmobiles), cross-country travel via foot or horseback, and dispersed camping may increase within areas proposed for savanna creation and KBB opening restoration under Alternatives 2 and 3. Increased recreational use might reduce the quantity and quality of potential and occupied KBB habitat by:

- *Damaging or disturbing KBB habitat elements (i.e., trampling, removing, or otherwise damaging wild lupine or other important nectar plants, or increasing non-native invasive species);*
- *Increasing the risk of vehicle/KBB collisions, visitors directly harming, harassing, or killing KBB (all life stages);*
- *Temporarily displacing, altering movement, or disrupting normal behavior of KBB (i.e., interfere with dispersal or mating activities);*
- *Increasing soil disturbance, erosion, compaction, and the amount of bare ground;*
- *Increasing the risk of illegal collection; and/or*
- *Wildfires (USDA Forest Service 2006a, USDI Fish and Wildlife Service 2006)." (EA, 3-64)*

"Cross-country travel for horseback riding and riding along Forest System roads would still be permitted within the Otto Metapopulation Area under Alternatives 2 and 3. In addition, under Alternatives 2 and 3, horseback riding would still occur on county roads that occur within potential or occupied KBB habitat within the White River and Otto Metapopulation Areas.

Because of their relatively large weight and small area in contact with ground, horses have a relatively high potential for environmental damage: more than 20 times the pressure of a man wearing boots and more than twice the pressure by a trail bike or four-wheel drive vehicle (Landsberg, et. al. 2001). Horse use has been shown to result in soil erosion and compaction (Cole and Spildie 1998, Deluca et al. 1998, Campbell and Gibson 2001, Pickering et al. 2009). In addition, horse use has been shown to damage forbs and shrubs via trampling and grazing, and cause defoliation and nutrient enrichment by urination and defecation, reducing plant height and biomass and changing plant species composition along trails (Cole and Spildie 1998, Pickering et al. 2009). Studies also have shown that horses can transport the seeds of non-native invasive species in their manure and thus have the potential to spread invasive species (Campbell and Gibson 2001, Landsberg, et. al. 2001, Cosyns, et. al. 2005, Wells and Lauenroth 2007, Pickering, et. al. 2009, Stroh and Struckhoff 2009, Pickering and Mount 2010). The risk of invasive species establishment is highest when manure is deposited in disturbed, damp sites, especially off-track (Landsberg, et. al. 2001).

In addition to adversely affecting soil and vegetation, horse use has been reported as a contributing factor to the decline of several invertebrate species. Vaughan and Black (2002) reported that within one site occupied by the Taylor's checkspot butterfly, 15-16 horses trampled much of the area containing Indian paintbrush (the larval hostplant) and might have played a role in the extirpation of the Taylor's checkerspot from the site. Development of the Mt. Adams Horse Camp at Bugle Springs in the Gifford Pinchot National Forest was expected to be detrimental to Mardon skippers as a result of trampling by humans and horses, and grazing by horses within Mardon skipper habitat (Black, et. al. 2002). Recreation also has been found to disrupt the normal behavior of KBB and other listed butterfly species, potentially reducing availability of suitable habitat and reducing productivity. Hiking, jogging, and dog walking along trails in occupied KBB habitat at Indiana Dunes National Lakeshore was found to significantly disturb KBB (personnel communication, Dr. Tory Bennett, Oregon State University, May 9, 2010). Post-disturbance female KBBs flew for longer periods of time than male KBBs before returning to natural

behavior, such as ovipositing, nectaring, host plant searching behavior and basking (Ibid). Empirical data suggests that if female KBB are frequently disturbed, they select host plants further from trails, essentially degrading the quality of KBB habitat in proximity to trails and reducing the total amount of suitable habitat available to females (Ibid). These results have implications for female KBBs in terms of energy expenditure (potentially impacting their survival and egg production), their oviposition rate (potentially decreasing the number of eggs laid over an individual's flight period), and host plant selection (potentially limiting females from ovipositing on lupines near trails). KBB sensitivity to horse use along trails in occupied habitat would likely be greater than hiking, jogging, and dog walking.

By reducing horseback riding within potential or occupied KBB habitat within the WRSNA as proposed under Alternatives 2 and 3, this non-motorized use would be less likely to trample KBB (all life stages); temporarily displace, alter movement, or disrupt normal behavior of KBB (i.e., interfere with dispersal or mating activities); damage wild lupine or other important nectar plants; reduce presence and productivity of savanna nectar species; increase non-native invasive species; or increase soil disturbance, erosion, soil compaction, and the amount of bare ground. Requiring removal of horse manure, feed, and hay at the designated day-use parking area and at designated camping areas within the WRSNA also likely would reduce the risk of introducing and spreading non-native invasive species within the Project Area. Allowing for watering horses with buckets at identified permanent water sources is not expected to affect KBB or its habitat, as the watering locations would not occur within potential or occupied KBB habitat.

Horseback riding and its associated impacts (i.e., damaging and reducing wild lupine or other important nectar species, killing or disrupting the behavior of individual KBB, spreading nonnative invasive species, increasing soil disturbance, erosion, compaction, and bare ground) might adversely affect KBB where county roads, Forest System roads, and National Forest System lands remain open to this non-motorized use within potential and occupied KBB habitat. Potential adverse effects from cross-country travel and horseback riding along Forest System roads within potential and occupied KBB habitat in the Otto Metapopulation Area would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A. Signs and barriers would be posted to ensure the public stays on Forest System roads within occupied KBB habitat. If damage from horseback riding is noted within occupied KBB habitat, Forest System roads providing access to damaged occupied sites would be relocated or decommissioned. Signs would be posted to ensure the public stays on roads within unoccupied KBB habitat. If damage from horseback riding is noted within unoccupied KBB habitat, barriers would be installed to ensure the public stays on Forest System roads. Potential adverse effects from county roads that would remain open to horseback riding within potential and occupied KBB habitat in the White River and Otto Metapopulation Areas also would be minimized with the implementation of conservation measures outlined for KBB habitat in Appendix A.

Overall, recreation management activities proposed under Alternatives 2 and 3 would likely decrease the risk of mortality and improve habitat quantity and quality for KBB within the Project Area. Alternative 3 would reduce potential adverse effects of recreational use to KBB and its habitat more than Alternative 2, given that it proposes a greater reduction in human access and use within potential and occupied KBB habitat. Both Alternatives would meet Forest Plan management objectives for the WRSNA (USDA Forest Service 2006b)." (EA, pgs. 3-66 thru 68)

As stated, the implementation of conservation measures in Appendix A would minimum the potential for adverse effects on KBB within the Project Area. Included among these terms:

> *"If, at any time, horse use compromises the integrity of Karner blue butterfly habitat, cultural resources, or other recreational attributes of the White River Semiprimitive Nonmotorized Area, then this use will be removed from this area and relocated to other, more suitable locations on National Forest System lands." (EA, pg. A-5)*

Comment 55AAA: Your opposition to road closures in this Project Area is noted. The alternatives presented in this project provide for varying levels of open U.S. Forest Service roads to provide varying levels of access to NFS lands. Your concerns relating to the development of the 1986 and 2006 Forest Plans and the process for the designation of Semiprimitive Nonmotorized Areas are noted. Comments on these plans were accepted during the development of each plan, respectively, according to the NEPA process. The time period for utilizing comments in the development of these plans has expired. Therefore, while your comments are noted, they are beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 55BBB: Your concerns relating to the intent of the 1986 Forest Plan is noted. A new Forest Plan was developed and approved in 2006. The management activities that are proposed in the Savanna Ecosystem Restoration Project are in accordance with this Forest Plan.

Comment 55CCC: The USFS is under the Executive Branch of the United States Government. The USFS is not responsible for drafting legislation; only interpreting and implementing the legislation that is drafted. This comment is outside of the scope of the Savanna Ecosystem Restoration Project.

Comments 55DDD thru 55EEE were originally submitted on May 7, 2010 and responded to on May 17, 2010. Any additions to the original responses are noted in italics.

Comment 55DDD: The locations of dispersed camping areas, trails, and roads are all elements of consideration within this Project Area. Maps are developed to highlight the treatment activities that are proposed in a Project Area by alternative. Attempts are made to make these maps as comprehensive as possible; without having so much information included that the maps are not legible to the average user. Your comments, as applicable, will be used to help shape the range of alternatives for this project area. We will include….as many of your recommendations as possible in the development of the maps for this project. We are incorporating these and your previous comments as part of the Project Record for this project.

Comment 55EEE: In order to schedule a time for a field review of the project area, I will need several dates when you will be available to meet. In addition to dates, please send an itinerary for your proposed site visit that includes the locations to be visited, topics to be discussed, and an estimate on the amount of time necessary at each site.

Comment 55FFF was originally submitted to US Fish & Wildlife Service personnel for a response on May 9, 2010.

Comment 55FFF: The inquiries of this letter were directed to the Fish and Wildlife Service on May 9, 2010**.**

Comment 55GGG was originally submitted on August 4, 2010. Any additions to the original responses are noted in italics.

Comment 55GGG: The field review of this area occurred with Les Russell (District Ranger) and Christopher Frederick (IDT Leader) on August 6, 2010.

Comments 55HHH thru 55NNN were originally submitted on October 25, 2010.

Comment 55HHH: Management of the White River portion of the Project Area as a Semiprimitive Nonmotorized area was a decision made in the 1986 Forest Plan and was not changed by the 2006 Forest Plan update. After completion of the White River Opportunity Analysis roads within this area have been closed. The Savanna Ecosystem Restoration Project evaluates alternatives for closing the remaining roads under U.S. Forest Service jurisdiction to implement Forest Plan direction for the White River Semiprimitive Nonmotorized Area and to achieve the recovery goals for the White River and Otto metapopulation areas for the Karner blue butterfly, i.e. the Purpose and Need for this project. (EA, pgs. 1-8 and 9; Forest Plan, pgs. III-6.1-11 and 2-26)

Therefore, the closing of the remaining U.S. Forest Service roads within the WRSNA would achieve the desired future condition of Semiprimitive Nonmotorized for the White River and protect habitat for the KBB (i.e. protection of wild lupine). Alternative 1 would leave the existing road system within the WRSNA intact. Though this alternative would not meet the Purpose and Need for the project, it does give consideration to leaving open some of the road segments that you have identified in your comment 55HHH, specifically part A, numbers 1, 6, 7, 8 and 10.

In addition, there were comments during the public scoping period for this project that identified specific segments of road to leave open in support of developing a "Scenic Driving Route" in the WRSNA. This was discussed in the EA under Alternatives Considered but Eliminated from Detailed Analysis. The development of a "Scenic Driving Route" would not meet the Purpose and Need of the Savanna Ecosystem Restoration Project. In addition, the U.S. Forest Service cannot make management decisions on properties or features that are owned by, or under the jurisdiction of, other private landowners or public agencies. The implementation of the "Scenic Driving Route" would be reliant on the abandonment of the roads within the Semiprimitive Nonmotorized Area that are under the jurisdiction of the Oceana County Road Commission (EA, pgs. 2-8 and 9).

In addition, comments in support of changing the Management Area designation for the WRSNA from Semiprimitive Nonmotorized to Roaded Natural to allow for more motorized access were received. This alternative was analyzed but eliminated from detailed analysis because changing a Management Area is beyond the scope of this Project (EA, pg. 1-9).

The most current maps of the Forest transportation system within the Project Area are the Alternative 1 maps at the end of Chapter 2 of the EA.

Comment 55III: A natural-appearing environment is the Desired Future Condition for the WRSNA, as identified in the Forest Plan (pg. III-6.1-4):

> *"The desired future condition of this management area will be characterized by a predominantly natural or natural-appearing environment."*

The posts, cross-bucks, and steel gates in this area have been used to close roads and protect occupied habitat and restoration areas and are intended to be temporary in nature, wherever possible. The posts and cross-bucks are wood; an appropriate material for use in a Semiprimitive Nonmotorized area. The goal is that the disintegration of the closures will coincide with the disappearance of closed roadbeds and recreational impacts to habitat resulting in a more natural appearing environment. Steel gates are used on roads that will remain for access to private property or for administrative use. These are found in a limited number of locations and should not detract from the area's appearance. The effects of this project on the scenery within the Project Area are discussed in the EA (pgs. 3-172 thru 181).

Law enforcement activities on the Forest are carried out by Law Enforcement Officers (LEOs) and Forest Protection Officers (FPOs). Law enforcement is the primary duty of LEOs. As such, they are fully trained and equipped (emergency vehicle, firearm, etc.) to handle the wide variety of infractions that can occur on National Forest System lands. Each District on the Huron-Manistee National Forests has at least one full-time LEO, with additional LEOs available to work on a special project. The LEOs are funded at the Regional level. FPOs are District U.S. Forest Service personnel that enforce minor infractions on National Forest System lands as a collateral duty. They receive FPO training, but are not equipped as LEOs. Generally, FPOs serve in a support role to LEOs by enforcing the laws relating to infractions that are not considered dangerous or life-threatening. The funding for FPOs comes out of the District budget.

The money that is allocated for LEOs and FPOs does not fluctuate based on increased need in particular areas. Rather, resources are allocated or re-allocated to areas of need. While the increased levels of enforcement that may be necessary in the Project Area would contribute to increased direct costs for enforcement there would not be increased allocations for these costs in the budget. It is recognized that increased enforcement in this area could detract from the resources that may be available for enforcement in other areas.

Comment 55JJJ: We acknowledge your comments relating to the development of the 1986 Forest Plan, the development of the 2006 Forest Plan, and the processes related to the designation of the Semiprimitive Nonmotorized Areas. The development of these plans and Management Area designations occur at the Forest level and are beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 55KKK: We acknowledge that you do not support the use of the United States Fish and Wildlife Service's Karner Blue Butterfly Recovery Plan as a blueprint for the Huron-Manistee National Forests Draft Karner Blue Butterfly Strategy. The Savanna Ecosystem Restoration Project is a site-specific project that is tiered to the existing and applicable Forest, interagency, and programmatic plans that have been approved and are in place. Therefore, your concerns are beyond the scope of this project.

Comment 55LLL: The purpose of the Conservation Measures is described in the EA on page II-6:

> "*Conservation measures are designed to prevent negative environmental impacts or to make the impacts that do occur less severe. These may include: avoiding an impact by not taking a certain action or part of an action; minimizing an impact by limiting the degree or magnitude of an action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments. Some conservation measures are common to all action alternatives, while others may apply only to specific treatment unit(s).*"

The development of project-specific Conservation Measures occurs through the interdisciplinary process used by the U.S. Forest Service. These measures are consistent with U.S. Forest Service policy and may include input from other State and Federal agencies. Measures may also be developed in consideration of issues identified by the public through the scoping process. The development of the Conservation Measures for the KBB is included in Appendix A (EA, pg. A-5):

> "*…conservation measures are designed for the protection, restoration, and maintenance of Karner blue butterfly as they apply to occupied and unoccupied habitat. They will be implemented where Karner blue butterflies or their habitat are documented or found within the Project Area (i.e. currently applies to opening restoration and savanna creation treatment units). These are from the Final Recovery Plan for the Karner blue butterfly (Lycaeides melissa samuelis) (USDI Fish and Wildlife Service 2003), the Draft Karner Blue Butterfly (Lycaeides melissa samuelis) Habitat Management Strategy for the Huron-Manistee National Forests (USDA Forest Service 2004a), the Biological Opinion on the Programmatic Biological Assessment for the Huron-Manistee National Forests Land and Resource Management Plan (USDI Fish and Wildlife Service 2006), the Programmatic Biological Assessment for the Huron- Manistee National Forest (USDA Forest Service 2006a), and the Forest Plan for the Huron- Manistee National Forests (USDA Forest Service 2006b).*"

The economic trade-offs associated with the different alternatives of this project are discussed in the EA (pgs. 3-204 thru 212). It should be noted, upon review of the Environmental Assessment, we identified an error in *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209) (see the Draft EA Errata Sheet). In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3. No changes are necessary for *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (EA, pg. 3-206). This and other errors in the EA are identified on the Draft EA Errata Sheet.

Comment 55MMM: We acknowledge your comments on the development of the Motor-Vehicle Use Map, the large woody debris project in the Manistee Recreational River, and the processes of designating Semiprimitive Nonmotorized Areas. The processes related to the implementation

of these occurred either on another District or at the Forest or National level. They are beyond the scope of the Savanna Ecosystem Restoration Project.

Comment 55NNN: The economic trade-offs associated with the alternatives analyzed for the Savanna Ecosystem Restoration Project are discussed in the EA on pages 3-204 thru 3-212.

Comment 55OOO was submitted on November 3, 2010.

Comment 55OOO: The gates within the WRSNA were opened prior to November 15, 2010, per the Settlement Agreement.
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Commenter: Michael Misch
Response:
Comment 56A: We acknowledge your support of Alternative 1, No Action for the Savanna Ecosystem Restoration Project.
++++++++++
Commenter: William Morris
Response:
Comment 57A: We acknowledge your comment to scale back the project as it is proposed and to seek out a partnership to do savanna restoration work on the Owassippe Boy Scout property. This project would utilize an adaptive management approach. This approach is described in the Environmental Assessment (EA, pg. 1-11):

> *"Not all sites would receive the same treatments. For example, relatively open forests with remnant native grass and/or nectar plant populations would require fewer treatments to achieve the desired future condition as compared to dense forests. An adaptive management approach would be used to determine the total acreage receiving each treatment and the order in which treatments would be applied. The amount and intensity of actual restoration activities would be based on the results of monitoring."*

Therefore, the acreages that are proposed for savanna creation and opening restoration reflect a maximum value, with the actual amount being dependent on successful results of previous treatments occurring in other locations.

The primary objective of the Savanna Ecosystem Restoration Project is to establish and maintain suitable habitat that will support two large viable metapopulations (i.e., the Otto and White River Metapopulation Areas) in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004). (EA, pg. 1-2) The USFWS identified the following recovery goals for the Otto and White River Metapopulation Areas:

1) Large viable metapopulations (≥ 6,000 first or second brood adults).
2) Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3) Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4) Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum

distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. The scale of the activities under Alternatives 2 and 3 is proposed to meet recovery goals within these core areas. Management of locations outside of these core areas could be considered once the corridors for dispersal are established.

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Commenter: David Moulds

Response:

Comment 58A: We recognize the importance of this area to those who have used the public lands within the Project Area to recreate. The wide variety of recreational uses within the Project Area was identified in the EA (pg. 3-149):

> *"Some of the recreational uses of National Forest System land that occur include: hunting for deer, bear, turkey, small game, and grouse; fishing; gathering forest products; driving for pleasure; camping; observing wildlife; hiking; horseback riding; mountain biking; canoeing; boating; kayaking; tubing; and snowshoeing and cross-country skiing in the winter."*

Opportunities for all of these activities would continue within the Project Area. Under all of the alternatives analyzed, hunting and fishing would continue to be allowed throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Under Alternatives 2 and 3 of the Savanna Ecosystem Restoration project, there would be changes to the transportation system that provides motorized access throughout the Project Area. The majority of these changes would occur within the WRSNA as shown in Table 3.40 of the EA (pgs. 3-185 and 186). There would be no changes to the county roads in the WRSNA as a result of this project, as these roads are under the jurisdiction of the Oceana Road Commission. While access to the existing U.S. Forest Service Road system would change under Alternatives 2 and 3, motorized access would be maintained into the foreseeable future using the county road system.

The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent it from trending toward extinction. According to the Karner Blue Butterfly Recovery Plan (U.S. Fish and Wildlife Service, 2003):

> *"The most important threats to the Karner blue range wide are habitat loss, which has been accompanied by increased fragmentation of the remaining suitable habitat, and habitat alteration primarily resulting from vegetational succession. Related to these is the threat of incompatible management stemming from conflicting and potentially conflicting management objectives (page 37). Habitat loss has resulted in a reduction in the number of Karner blue subpopulations, habitat fragmentation, and smaller-sized occupied sites. Habitat alteration has reduced the abundance and quality of the Karner blue's food resources (lupine and nectar plants) and subhabitat diversity. Non-management of habitat has resulted in habitat loss over time due to ecological succession. Loss to commercial, industrial, and residential development is more a threat in areas where Karner blue populations are in close proximity to cities or desirable recreational lands."* (pg. 38)

Habitat restoration work for the Karner blue butterfly is on-going in New York, Wisconsin, Indiana, and in other locations in Michigan. This work is being done collaboratively with public, private, and non-profit participation, on both private and public lands. The primary objective of the Savanna Ecosystem Restoration Project is to establish and maintain suitable habitat that will support two large viable metapopulations (i.e., the Otto and White River Metapopulation Areas) in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004). (EA, pg. 1-2)

The site-selection for the creation of savanna and the restoration of openings was based on a combination of factors, including the existing locations of KBB (identified through annual surveys) and the appropriate site conditions (vegetation, soils, climate, etc.). Because the KBB has a limited distribution and dispersal distance, restoration efforts are focused adjacent to occupied habitat. The forest types affected was discussed in the EA (pg. 1-10):

> *"These include approximately 1,491 acres of black oak, 320 acres of oak/aspen mix, 249 acres of red pine/oak mix, 106 acres of aspen, 71 acres of red pine, 26 acres of white oak, 24 acres of mixed oak, 19 acres of Scots pine, and 9 acres of jack pine."*

The activities associated with the creation of savanna and the restoration of openings in this area are based on the direction of the Forest Plan and the KBB Recovery Plan (USDI, 2003).

> *"Manage permanent openings and/or grasslands to meet species viability needs (Forest Plan). Maintain existing habitat and restore suitable habitats by converting forested stands into savanna for the KBB in the Muskegon Recovery Unit. Maintain sufficient habitat to meet the recovery goals for viable KBB populations within the Otto and White River Metapopulation Areas. Continue savanna/barrens restoration projects within the Muskegon Recovery Unit with emphasis on connectivity between KBB subpopulations, expansion of existing sites, and enhancing attributes within sites (USDI 2003)."* (EA, pg. 1-8)

The approach used to implement these activities would be adaptive. This is also described in the EA (pg. 1-11):

> *"Not all sites would receive the same treatments. For example, relatively open forests with remnant native grass and/or nectar plant populations would require fewer treatments to achieve the desired future condition as compared to dense forests. An adaptive management approach would be used to determine the total acreage receiving each treatment and the order in which*

treatments would be applied. The amount and intensity of actual restoration activities would be based on the results of monitoring."

Therefore, the acreages that are proposed for savanna creation and opening restoration reflect a maximum value, with the actual amount being dependent on successful results of previous treatments occurring in other locations.

Your opposition to this project is noted.
++++++++++
Commenter: Mumby
Response:
Comment 59A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.
++++++++++
Commenter: Bryan Myers
Response:
Comment 60A: We acknowledge your support of Alternative 2 as the preferred alternative for the Savanna Ecosystem Restoration Project. The EA documents the effects of horse use within the Project Area (pages 1-8, 2-3, 3-13, 14, 33, 34, 37, 40, 56, 64, 66-68, 75, 76, 78, 82, 84, 92, 93, 99, 109, 139, 140, 146, 149, 150, 158, 163, 164, 166-169, 171, 182, 188, 192, 198, 199, 202, 205, 206, 208, and 209). Horse use within the WRSNA would vary by alternative, with no restrictions occurring under Alternative 1, horse use being limited to a designated trail system under Alternative 2, and horse use being removed from the WRSNA under Alternative 3. This range is displayed in *Table 2.1: Summary Comparison of Alternatives* (pg. 2-10) of the EA.

A mountain bike-only trail was not considered as part of this project, as it was not part of the identified Purpose and Need or brought out during the public scoping process. However, mountain bike use would be allowed throughout the Project Area under all of the alternatives, in areas where it is not posted closed. Your willingness to provide volunteer, planning, and development support for such trails is acknowledged.
++++++++++
Commenter: Myrle Phillips
Response:
Comment 61A: The characteristics and factors associated with prescribed burning activities are considered in detail in the burn plans that are developed for each unit. The plans are developed after the Environmental Assessment is complete and prior to implementing the burn activities. This was discussed in the analysis:

"Site-specific burn plans are developed for each burn unit. These plans outline the environmental conditions required for conducting burn activities (i.e. wind direction, humidity, and temperature thresholds), the amount of resources required, the desired time of year, contingency plans, and any site-specific burning restrictions that may apply. Burn units are developed by considering existing control lines (i.e. roads, plow lines, etc.), fuel types, and natural features. The size of individual burn units can vary considerably, but efforts are made to keep the burn units to a size than may be safely completed within one operational period (one day)." (EA, pg. 3-111)

It was also included as part of the Conservation Measures associated with the use of prescribed fire:

> *Prescribed Fire (P)*
>
> *The following measure would be applied to all Treatment Units that are prescribed for burning:*
>
> 1. *Prescribed burns will take place after a burn plan is written and approved by the agency administrator for the Units to be treated. The burn plan will describe the management objectives for different Units, provide details of fireline and firebreak locations, desired weather conditions, firefighting forces required, safety concerns, and the anticipated smoke dispersal. Fireline intensity generated by the broadcast prescribed burns in red pine stands will be between 50 - 350 BTU/ft/sec. Rehabilitate firelines and firebreaks as needed.* (EA, pg. A-3)

The locations for prescribed burning activities are shown on the Vegetation Management maps at the end of Chapter 2 in the EA. These areas are identified as "Savanna Creation/Opening Restoration" and "Prescribed Burn Only". Burning would occur as a part of the establishment and maintenance of the savanna type and the restoration of existing openings. Burning would also be used as a tool to restore forest health and reduce hazardous fuel types in areas where private property and National Forest System lands are intermixed. The protection of private property is a priority in these areas. All burns will be on National Forest System lands, will have firelines around them, and will be monitored until declared out by the U.S. Forest Service.

Comment 61B: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The information relating to the herbicides proposed for use is located in Appendix C of the EA. Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are Restricted-Use. All herbicide applications will follow regulated use limits as established by the product labels.

The use of herbicides in this project would be permitted in two circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual stump spouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur (i.e. up to 360 acres). (EA, pgs. 2-4, 3-10 and 25)

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness. Some of these methods were described in the EA (pgs. C-10 and 11).

Although vegetative management treatments, including herbicide application, may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project Area, the biologists determined that the treatments would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species. (BA/BE, pgs. 99, 100, 103, 128, and 129).

In addition, activities under Alternatives 2 and 3 may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation, including herbicide application, are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71). All determinations were made based on implementation of the conservation measures listed in Appendix A.

Comment 61C: The wide variety of recreational uses within the Project Area was identified in the EA (pg. 3-149):

> *"Some of the recreational uses of National Forest System land that occur include: hunting for deer, bear, turkey, small game, and grouse; fishing; gathering forest products; driving for pleasure; camping; observing wildlife; hiking; horseback riding; mountain biking; canoeing; boating; kayaking; tubing; and snowshoeing and cross-country skiing in the winter."*

The Savanna Ecosystem Restoration Project does not propose to eliminate access to or eliminate use of the White River. Under all of the alternatives analyzed for this project, recreational use of the land and rivers would continue to be allowed throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed.

Under Alternatives 2 and 3, there would be changes to the transportation system that provides motorized access throughout the Project Area. The majority of these changes would occur within the WRSNA as shown in Table 3.40 of the EA (pgs. 3-185 and 186). There would be no changes to the county roads in the WRSNA, as these roads are under the jurisdiction of the Oceana Road Commission. While motorized access utilizing the existing U.S. Forest Service Road system would change, motorized access would be maintained into the foreseeable future using the county road system.

Comment 61D: The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area. The effects to wildlife would be dependent on the habitat requirements of the species. These effects were addressed within the Environmental Assessment (EA) and Biological Assessment/Evaluation (BA/BE):

> *"Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types"* (EA, pg. 3-81).

Proposed vegetative management activities would increase the quantity and quality of openland habitats (e.g., openings, savanna/barrens) and early successionalaspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early successionalvegetative types by: maintaining open areas; providing a diversity of foraging habitats; promoting nectaring sources from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas. (EA, pgs. 3-81 and 82)

> "*Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successionalvegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer.* (EA, pg. 3-82)

Overall, activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successionalvegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal with the implementation of the conservation measures described in Appendix A (EA, pgs. A-5 thru A-12) (EA, pgs. 3-82 and 85).

> "*Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to openland habitats (e.g., openings and savannas/barrens) and early successionalforest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, redshouldered hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future."* (EA, pgs. 3-90 thru 91)

"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area." (EA, pg. 3-91). Overall, activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest

types within the Project Area, and any adverse effects would be expected to be minimal with the implementation of the conservation measures described in Appendix A (EA pgs. A-5 thru A-12) (EA, pgs. 3-88, 89, 91, 92, and 93).

> *"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles, and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats."*(EA, pg. 3-98)

Overall, activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A (EA, pgs. A-5 thru A-12) (EA, pgs. 3-96 thru 99).

Thus, the biologists determined that the activities proposed under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or sub-populations of fish, wildlife, and plant species, but are not likely to cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Therefore, there would be both adverse and beneficial impacts anticipated to occur to the wildlife as a result of the activities associated with this project depending on the habitat requirements of the species. In addition, under the following treatment activities tree harvesting or mortality would occur (EA, pg. 2-3):

- *2,542 acres of savanna creation (existing forest types include: 1,490 acres of black oak, 319 acres of aspen/oak mix, 361 acres of red pine/oak mix, 117 acres of existing openings, 106 acres of aspen, 71 acres of red pine, 26 acres of white oak, 24 acres of mixed oak, 19 acres of Scots pine, and 9 acres of jack pine);*
- *1,050 acres of prescribed burning (in addition to the burning efforts related to savanna restoration/creation);*
- *761 acres of red pine thinning;*
- *519 acres of Karner blue butterfly opening restoration;*
- *23 acres of oak/aspen clearcut; and*
- *42 acres of non-native invasive plant*

Comment 61E: We acknowledge that there is an economic investment in the activities proposed for this project. As identified in the EA (pg. 3-205):

> *"The timber that is within this Project Area that would be harvested under these alternatives would not be likely to produce enough funds to cover the combined cost of doing this analysis and preparing the sale areas (layout, road improvements, timber marking, etc.). Additional funding would be necessary to accomplish the program of work that would be necessary to accomplish the successful restoration of the savanna ecosystem in this area. Due to the adaptive management approach that is used for these activities, the costs associated with these activities are extremely variable. For example, two adjacent areas would likely require different levels of treatments (both in type and scale) to successfully bring the restoration to completion. While prescribed burning alone may be sufficient at one site, an adjacent site may require tree harvesting, tree and stump removal, prescribed burning, and the seeding in of native vegetation. As a result of the differences in these types of treatments, the costs can vary considerably."*

These estimated project costs are discussed in detail in the EA (pgs. 3-207 and 208). It should be noted, upon review of the Environmental Assessment, we identified an error in *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (EA, pg. 3-209). In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3. No changes are necessary for *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (EA, pg. 3-206). This and other errors in the EA are identified on the Draft EA Errata Sheet.

In addition to the costs, this project would also provide the opportunity for economic benefit:

> *"… additional employment opportunities associated with timber harvesting activities and the creation and restoration of the savanna ecosystem. Employment opportunities would likely be in the form of contractors and seasonal and permanent staff. Included would be such activities as: timber sale layout and administration, timber harvesting, timber stand site preparation, regeneration surveys, savanna site preparation, NNIS/savanna herbicide application, seeding and planting, road and parking lot construction and maintenance, and wildlife surveys. Further contributions to the economy would occur through the purchasing of materials and supplies necessary to accomplish the work. These activities would occur over a period of up to 10 years and, when compared with the economy of Northern Lower Michigan, would have little to no*

impact on the prevailing conditions. In addition to the projects that would be implemented under Alternatives 2 and 3, other similar types of projects would also be likely to occur within this Project Area and in other locations of the HMNF. These projects would also contribute to the economy of Northern Lower Michigan and would likely have beneficial cumulative effects on the public and private natural resource management sector.

In addition, the implementation of either of these alternatives would provide payments from the 25% Fund which would be used to assist in the funding of improved transportation systems and education within the counties where treatment activities are proposed. These same types of funds would be available to other counties where similar types of projects occur. While individual projects would likely have only a small impact on the respective county coffers, cumulatively the income generated from the 25% Fund could serve as an important supplement in counties that have been hit the hardest by the recent economic downturn." (EA, pg. 3-211)

Comment 61F: ORV grant money is available through the State of Michigan for trail maintenance, law enforcement, and ORV damage restoration. The U.S. Forest Service is eligible to apply for the trail maintenance and damage restoration grants. Trail maintenance grants are available to agencies or partner groups to conduct routine maintenance, such as brushing and signing, on designated ATV and motorcycle ORV damage restoration grants are project specific and for the rehabilitation of damaged public lands. These grants are authorized, reviewed, and inspected by the State of Michigan. Restoration grants require the work to be completed within two years of award and the cost of the projects is reimbursed once the work is completed.

Because the use of ORV grants are limited to ORV-related trail maintenance or site restoration, the use of these funds for the management of dispersed camping sites within the WRSNA not be appropriate. However, there are ORV damage sites along the White River in the Otto portion of the Project that are eligible. These sites were submitted for an ORV damage restoration grant in 2009 and were selected for funding by the State of Michigan. Work on these areas will be completed by 2011 (EA, pgs. 3-126 thru 129).

Comment 61G: The issuance of a Forest Supervisor's Closure Order would be a part of this project, as described in the EA (pg. 2-3):

"Alternative 2 would also include a Forest Supervisor's closure order for the WRSNA that would require that horses remain on the designated trail, limit motorized camping to designated sites, and restrict day-use parking for horse use to the designated parking area on Arthur Road."

Under Alternative 3,

"A Forest Supervisor's closure order would prohibit horses in the WRSNA and limit motorized camping to designated sites."

Once authorized, these closures would be monitored to ensure we are gaining compliance. This was also identified in the EA (pg. 2-8):

Closure Compliance

Objective: *Ensure that the guidelines of the closure order for the selected alternative are adhered to throughout the Project Area.*

Desired Result: *Forest Roads within the WRSNA are maintained as closed. KBB habitat is not compromised by the recreation activities occurring within the Project Area.*
Methods: *Annual inspections of roads, trails (including the associated features), and KBB habitat by the applicable resource specialists.*
Responsibility: *District Assistant Ranger for Implementation*

The Forest Supervisor's Closure Order is also referred to in the effects section of the EA and as part of the Conservation Measures for the KBB:

> (Alternative 2) *"Implement a Forest Supervisor Closure Order for the WRSNA that would require that horses remain on designated trail, limit motorized camping to designated sites, and restrict day-use parking for horse use to the designated parking area on Arthur Road."* (pg. 3-160)
>
> (Alternative 3) *"This alternative would have the greatest negative impact on recreationists who participate in horseback riding and horse camping activities in the WRSNA because it would close the WRSNA to these activities through a Forest Supervisor's Closure Order (see Map 3.13)."* (pg. 3-169)
>
> (KBB Conservation Measure) "*Occupied Karner blue butterfly sites will be protected by installing signs and blocking public access using a variety of methods, such as: road closures, barricades, Forest Service gates, woven-wire fencing, wind-rowed slash, rocks, stumps, barrier posts, cross bucks, woodland strips, or brush piles. Signs and barriers will prohibit ORV use and camping in occupied sites and direct camping to areas outside occupied habitat. Passage for wildlife will be provided regardless of the method used. If closures are needed, a Forest Supervisor's closure order would be written to facilitate enforcement of this protection measure. Post signs along roads and trails within or adjacent to potential Karner blue butterfly habitat to ensure the public stays on designated roads and trails. If damage from human activities is noted within potential Karner blue butterfly habitat, a variety of methods will be used to block public access, such as: road closures, barricades, forest service gates, woven-wire fencing, wind-rowed slash, rocks, stumps, barrier posts, cross bucks, woodland strips, or brush piles. Passage for wildlife will be provided regardless of the method used. If closures are needed, a Forest Supervisor's closure order would be written to facilitate enforcement of this protection measure."* (EA, pg. A-6)

Comment 61H: We believe that the areas that you refer to in this portion of your comment are the demonstration plots that are in the process of being established within the WRSNA (in the White River Metapopulation Area). The purpose of these plots is to determine the best methods for creating and restoring the type of savanna habitat that is appropriate for sustaining viable reproducing populations KBB. When complete, these areas will total approximately 48 acres. The work that is associated with the establishment of these demonstration plots was approved through two separate Categorical Exclusions (2007 and 2008). Preparation of these included public involvement.

We are currently conducting savanna restoration treatments on 365 acres within the White River Metapopulation Area under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), and implementing opening restoration treatments to restore occupied KBB sites on 431 acres within the White River and Otto Metapopulation Areas under the Karner Blue

Butterfly Habitat Restoration Project (USDA Forest Service 2009c). The activities included under Alternatives 2 and 3 complement these two restoration efforts by expanding the acreage to be treated for savanna creation and opening restoration, and increasing the number of treatment techniques that can be used to meet restoration goals. (EA, pg. 3-69) Under the Savanna/Barrens Restoration Project, the District is conducting a demonstration project covering approximately 104 acres to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat. Similar demonstration plots would be established within the Otto Metapopulation Area, prior to the implementation of the savanna creation/restoration activities that are included in the Savanna Ecosystem Restoration Project. By applying what it learns from effectiveness monitoring and small scale demonstration projects at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective. (EA, pgs. 3-54 and 64).

Comment 61I: Law enforcement activities on the Forest are carried out by Law Enforcement Officers (LEOs) and Forest Protection Officers (FPOs). Law enforcement is the primary duty of LEOs. As such, they are fully trained and equipped (emergency vehicle, firearm, etc.) to handle the wide variety of infractions that can occur on National Forest System lands. Each District on the Huron-Manistee National Forests has at least one full-time LEO. Additional LEOs are available to focus on an area with a significant financial investment or the implementation of or change in policy. FPOs are District U.S. Forest Service personnel that enforce minor infractions on National Forest System lands as a collateral duty. They receive FPO training, but are not equipped as an LEO. Generally, FPOs serve in a support role to LEOs by enforcing the laws relating to infractions that are not considered dangerous or life-threatening.

The money that is allocated for LEOs and FPOs does not fluctuate based on increased need in particular areas. Rather, resources are allocated or re-allocated to areas of need. While the increased levels of enforcement that may be necessary in the Project Area would contribute to increased direct costs for enforcement there would not be increased allocations for these costs in the budget. It is recognized that increased enforcement in this area could detract from the resources that may be available for enforcement in other areas.

Relating to the future maintenance, the creation or restoration of savanna associated with this project would occur through the processes of adaptive management (EA, pgs. 1-11, 3-19, 24, 30, 35, 54, 64, and 206). In adaptive management, success is dependent on the monitoring of treatment areas after activities have occurred. This allows the future treatments to be modified as necessary in order to adjust to site-specific conditions that may vary between sites. This includes such factors as local soil conditions, micro-climate and micro-topographical fluctuations, and the existing vegetative and seedbank composition. Post-treatment monitoring determines the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. As a result of this response, different locations are likely to progress toward the desired future condition at different rates and require different types and levels of treatments.

Comment 61J: The creation or restoration of the savanna and prairie ecosystem type is not a one step process. The number and type of steps that are required depend on a variety of factors. These include: the amount of trees currently occupying a site, the amount of topsoil that was

lost prior to reforestation, the amount and type of seed in the seedbank, the vegetative type of the surrounding areas, and more. By the "similar projects failed", we assume you are referring to the activities conducted within the Newaygo Experimental Forest. These activities served as the first step in the successful re-establishment of prairie in this area. Much has been learned through these projects relating to the contributions that can be expected from the existing seedbank, the need to protect the restoration from woody encroachment, the quantity of restoration that is reasonable in an area at a given time, and the important roles that site-specific monitoring plays in executing the adaptive management approach. The restoration work in Newaygo is not completed and is included as an upcoming project. The Newaygo area was discussed in the EA (pg. 3-39):

> *"The Forest also undertook an experimental restoration of pine plantation to dry sand prairie habitat in the Newaygo Experimental Forest. That project has not continued to completion at this point in time, as encroachment of red pine and other factors are contributing to delay in successfully attaining a restoration in the area. Some restoration on non-Forest lands is also occurring through support from The Nature Conservancy."*

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Commenter: Ruth Postema

Response:

Comment 62A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project. The effects of the proposed activities on wildlife have been considered in the EA (pages 3-41 through 3-103). More specifically, the effects of disturbance on wildlife are discussed on the following pages of the EA: 3-42, 45, 47, 57, 58, 62, 64-68, 73, 76, 79, 80, 82-85, 87, 88, 91-96, 98, 99, 102, 104. The economic effects of this project have also been considered in the EA (3-204 thru 212).

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Commenter: Charles Race

Response:

Comment 63A: We acknowledge your support for the current road system in the Project Area. Forest management activities on the Huron-Manistee National Forests are guided by the 2006 Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan). The development and use of this plan is mandated through the National Forest Management Act of 1976 (NFMA) (EA, pg. 1-2). The Forest Plan divides the Forest into different Management Areas (MAs). These MAs provide for a wide variety of opportunities, outputs, and experiences across the entire Forest. Each MA has different objectives that are identified in order to move these areas toward their Desired Future Condition. Standards and Guidelines are included for each MA to assist in the implementation of the Forest Plan at the project level. The Project Area consists of MA 6.1 (Semiprimitive Nonmotorized Area), MA 4.4 (Rural), and MA 9.2 (Study Wild and Scenic River).

The portion of the Project Area that is designated as Semiprimitive Nonmotorized includes approximately 4,820 acres. According to the Forest Plan (pg. III-6.1-2), the Purpose of these MAs includes:

> *"Management activities in these areas provide for semiprimitive, nonmotorized recreational experiences and will reduce life-threatening and property-damaging wildfire potential. Areas*

> *support a wide variety of fish and wildlife species. Management enhances and improves habitats for species which avoid human activity".*

As it pertains to motorized access, the Desired Future Condition for this MA is described in the Forest Plan as:

> **"***Some roads are present but gated to provide access only for administrative or other permitted purposes. Improvements on these roads are infrequent and maintained to minimal standards necessary for health and safety needs. Other public agency roads may be present"* (pg. III-6.1-5)

Across the entire Huron-Manistee National Forests (~978,400 acres), this MA makes up approximately 6% (~64,400 acres) of all National Forest System lands.

We concur that the National Forest System lands within the Project Area have high levels of historic and current motorized-dependent recreational use (EA, pg 3-149). Under Alternative 1, this use would not change. Under Alternatives 2 and 3, it would be anticipated that the recreational use within the WRSNA would shift away from motorized-dependent recreational activities to those forms of recreation that are not dependent on motorized access, as described for Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other locations of public or private land that more adequately accommodates their type of recreational use. This is described for Alternative 3 in the EA (pg. 3-171):

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

The anticipated costs associated with the implementation of the activities included in this project are discussed in the EA on pages 3-206 and 3-209 (see also the Draft EA Errata Sheet).
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Commenter: Doug Reames
Response:
Comment 64A: We acknowledge your willingness to develop a partnership for the planting of lupine on your property.
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Commenter: Oscar Reed of West Shore Snowmobile Council
Response:
Comment 65A: We acknowledge your concerns regarding the roads associated with the West Shore Snowmobile Trail. All of the roads (under U.S. Forest Service jurisdiction) that you have indicated on your map would remain open to snowmobiles under all of the alternatives analyzed in the Savanna Ecosystem Restoration project.
++++++++++
Commenter: James Rigby
Response:
Comment 66A: Under all of the alternatives analyzed in the Savanna Ecosystem Restoration Project, hunting, fishing, hiking, and other recreational uses would continue. Under Alternatives 2 and 3, there would be changes to the transportation system that provides motorized access throughout the Project Area. The majority of these changes would occur within the White River Semiprimitive Nonmotorized Area (WRSNA) as shown in Table 3.40 of the EA (pgs. 3-185 and 186). There would be no changes to the county roads in the WRSNA, as these roads are under the jurisdiction of the Oceana Road Commission. While access to the existing U.S. Forest Service Road system would change under Alternatives 2 and 3, motorized access would be maintained into the foreseeable future using the county road system. This would provide some level of vehicular access into the area, for those seeking this as part of their recreational experience. In addition, motorized access to the North, South, and Main Branches of the White River would continue to be provided by both Forest and county roads for recreational activities (i.e. hunting, fishing, canoeing) in areas outside of the WRSNA, in accordance with the Motor Vehicle Use Map (see Map 3.8 on page 3-154 of the EA).

As stated in the EA (pg. 1-8):

> "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring.*"

The need for the road closures in this area is also identified in the EA (pg. 1-9):

> "*Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience.*"

The closing of roads within the WRSNA is identified in the Forest Plan standards (S) and guidelines (G) for Management Area 6.1 (pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM
I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg. 2-26):

G Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

Therefore, the closing of Forest roads within the WRSNA has been included as an element in this project as a result of the Management Area designation (6.1). These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine).

The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent it from trending toward extinction. The primary objective of the Savanna Ecosystem Restoration Project is to establish and maintain suitable habitat that will support two large viable KBB metapopulations (i.e., the Otto and White River Metapopulation Areas) in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004) (EA, pg. 1-2). The site-selection for the creation of savanna and the restoration of openings was based on a combination of factors, including the existing locations of KBB (identified through annual surveys) and the appropriate site conditions (vegetation, soils, climate, etc.). Because the KBB has a limited distribution and dispersal distance, restoration efforts are focused adjacent to occupied habitat. The approach used to implement these activities would be adaptive. This is described in the EA (pg. 1-11):

> *"Not all sites would receive the same treatments. For example, relatively open forests with remnant native grass and/or nectar plant populations would require fewer treatments to achieve the desired future condition as compared to dense forests. An adaptive management approach would be used to determine the total acreage receiving each treatment and the order in which treatments would be applied. The amount and intensity of actual restoration activities would be based on the results of monitoring."*

Therefore, the acreages that are proposed for savanna creation and opening restoration reflect a maximum value, with the actual amount being dependent on successful results of previous treatments occurring in other locations.

The effects that this project would have on the wildlife within the Project Area were discussed in the EA (pages 3-41 thru 103). Included in this discussion, are the effects related to habitat fragmentation (see pages 3-42, 85, 86, 91, 93, 94, 95, 98, and 100).

Comment 66B: We acknowledge your concerns with the effects that this project may have on the economy. The economic effects relating to this project were considered on pages 3-204 thru 3-212 of the EA. Specifically, the direct and indirect effects to local tourism were considered on pages 3-205 and 206.

> *"The closing of roads within the SPNMA would cause a shift in the type of recreational use within this area. The majority of existing use in this area is dependent on motorized vehicle access, either directly (i.e. driving for pleasure) or indirectly (i.e. the hauling of campers or horse*

rigs). Limiting the motorized access in this area to the existing county roads would change the recreational experience in this area. As a result, some of the existing motorized-dependent users would likely make a choice to go to other locations both inside and outside of the Project Area."

In the short-term, this shift would likely have minor economic impacts for those that are immediately adjacent to the Project Area; however, these impacts would not be likely to extend beyond the boundaries of this analysis (50 mile radius). These impacts would be more pronounced under Alternative 3, as horse use would be limited to areas outside of the SPNMA. Again, this use would also be likely to shift to other locations of the Forest and be unlikely to have major economic impacts that would extend beyond the analysis boundary.

In other areas throughout the Project Area, the short-term recreation use on the Forest would be displaced during harvesting operations and periodically thereafter during the follow-up restoration treatments. This displacement would not have lasting economic impacts within the analysis boundary, as users would likely move to other adjacent areas on the Forest during the period of displacement."

The cumulative effects to the economy were considered on page 3-212:

"Under Alternatives 2 and 3, opportunities for recreation would continue to be provided on both private and public lands within the Project Area and throughout Northern Lower Michigan. While the exact locations, types, and future trends of recreational use throughout the region is impossible to predict, this part of Michigan has an economy that is based on providing goods and services in support of recreational tourism throughout the year. This would not change as a result of this project."

Comment 66C: The locations for the specific management activities that are associated with this project are based on the existing populations of KBB and areas adjacent to occupied habitat with site conditions (vegetation, soils, climate, etc.) indicating a potential for savanna restoration. Existing populations are surveyed annually to determine the presence and abundance of KBB. Within this Project Area, the areas that have been identified include the Otto and White River Metapopulation Areas, as described in the EA (pg. 2):

"The Savanna Ecosystem Restoration (SER) Project Area is within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (see Figure 1.1). The recovery goal in the Muskegon RU is the development of two large viable metapopulations of KBB; each containing 6,000 butterflies. The location of these metapopulation areas is based on the overlap of historic savanna habitat and historic KBB populations. On National Forest System lands within the Muskegon RU, the Otto and White River Metapopulation Areas were identified. These two areas are the focus of the proposed Forest Service management activities for KBB in the Savanna Ecosystem Restoration project; a project with the primary objective of establishing and maintaining suitable habitat that will support two large viable metapopulations in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004)."

While we encourage private landowners to be aware of endangered species and to manage their land in a way that does not further jeopardize the persistence of the species, the U.S. Forest Service has no jurisdiction over these lands or how they are managed.

Comment 66D: We acknowledge your opposition to the Savanna Ecosystem Restoration project.

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Commenter: John Rigby

Response:

Comment 67A: We acknowledge the role that the National Forest System lands have had in your recreational experiences within this area. We concur that the National Forest System lands within the Project Area have high levels of historic and current recreational use (EA, pg. 3-149). Under Alternative 1, there would be no new management activities. Implementation of projects addressed in other documents would continue. Alternatives 2 and 3 would not eliminate recreational use in the area. Under these alternatives, it is anticipated that the recreational use within the White River Semiprimitive Nonmotorized Area (WRSNA) would shift from a reliance on motorized-access to non-motorized access to engage in recreational activities. This is described for Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user(s) to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other locations of public or private land because there is vehicle access for their recreational activity. This is described for Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

Comment 67B: The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent it from trending toward extinction. This is described in more detail in the EA (pg. 1-2):

> *"The proposed activities for a project must also be in compliance with other federal laws. One law that is key in the development of the Purpose and Need for the Savanna Ecosystem Restoration (SER) project is the Endangered Species Act of 1973 (ESA). Implementation and enforcement of the ESA is the responsibility of the United States Fish and Wildlife Service (USFWS), an agency within the Department of the Interior. One of their responsibilities under the ESA is the development of a Recovery Plan for each species that is listed as Endangered. A Recovery Plan is a comprehensive plan that describes the actions needed and population goals to be met to reclassify a species from endangered to threatened. The long-range goal of the Recovery Plan is the removal from the Federal list of species.*

In 2003, the Karner Blue Butterfly (KBB) Recovery Plan was released by the USFWS. The KBB Recovery Plan identifies actions to restore habitat, population goals, and monitoring requirements to stabilize and recover KBB populations throughout its historic range. It also identifies those areas where these habitat restoration activities need to occur (termed Recovery Units). KBB Recovery Units (RU) are based on known variations in physiography, climate, vegetation, and potential geographic genetic variation in KBB populations. The number of viable populations in a RU is based on the distribution of known populations or the need to improve existing populations. There are 13 RUs identified in the KBB Recovery Plan (United States Department of Interior (USDI) 2003).

The Savanna Ecosystem Restoration (SER) Project Area is within the Muskegon Recovery Unit, one of two Recovery Units on the Manistee National Forest (see Figure 1.1). The recovery goal in the Muskegon RU is the development of two large viable metapopulations of KBB; each containing 6,000 butterflies. The location of these metapopulation areas is based on the overlap of historic savanna habitat and historic KBB populations. On National Forest System lands within the Muskegon RU, the Otto and White River Metapopulation Areas were identified. These two areas are the focus of the proposed Forest Service management activities for KBB in the Savanna Ecosystem Restoration project; a project with the primary objective of establishing and maintaining suitable habitat that will support two large viable metapopulations in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004).

The USFWS KBB Recovery Plan identifies recovery actions and goals across the entire historic range of the butterfly. To guide Forest-level activities needed to meet the objectives of the KBB Recovery Plan, the Huron-Manistee National Forests prepared the DRAFT Huron-Manistee National Forests Karner Blue Butterfly Management Strategy (DRAFT Management Strategy, 2004). The DRAFT Management Strategy (2004) and the USFWS KBB Recovery Plan (2003) were incorporated by reference in the Forest Plan (2006). The Forest Plan contains goals, objectives, and specific guidance on the management of National Forest System lands. Site-specific proposals such as the Savanna Ecosystem Restoration project are developed to implement the Forest Plan. For the SER project, the Forest Plan provides the Purpose and Need of implementation of the KBB Recovery Plan and provides the standards and guidelines that apply to the activities in this project (Forest Plan, pp. II-26)."

The economics related to this project are presented in the EA (pgs. 3-204 thru 3-212). There are no direct income-generating mechanisms associated with licenses or fees related to the management of habitat for the KBB. As identified in Table 3.44 (EA, pg. 3-206), twenty-five percent of the revenue that is generated from the sale of timber on National Forest System lands is directed for use by local governments for such items as education and road improvements. This is discussed for Alternatives 2 and 3 in the EA (pg. 3-211):

"In addition, the implementation of either of these alternatives would provide payments from the 25% Fund which would be used to assist in the funding of improved transportation systems and education within the counties where treatment activities are proposed. These same types of funds would be available to other counties where similar types of projects occur. While individual projects would likely have only a small impact on the respective county coffers, cumulatively the income generated from the 25% Fund could serve as an important supplement in counties that have been hit the hardest by the recent economic downturn."

In addition, funds generated from the sale of timber can be used to accomplish other management activities within the Project Area. However, due to the type of product involved in this project and the high cost of restoration work, there would not be likely to be enough revenue to support the completion of all of the activities that are proposed. This is discussed in the EA (pg. 3-205):

> *"The timber that is within this Project Area that would be harvested under these alternatives would not be likely to produce enough funds to cover the combined cost of doing this analysis and preparing the sale areas (layout, road improvements, timber marking, etc.). Additional funding would be necessary to accomplish the program of work that would be necessary to accomplish the successful restoration of the savanna ecosystem in this area."*

The effects that this project would have on the wildlife within the Project Area were discussed in the EA (pgs. 3-41 thru 103). The species you mention were discussed on the following pages:

Grouse: pgs. 3-41, 43, 44, 77, 78, 80, 81, 82, 85, 86, and 101
Deer: pgs. 3-41, 42, 53, 62, 77, 80, 81, 82, 87, and 90
Turkey: pgs. 3-41, 77, 80, 82, and 90

The biologists determined that the activities proposed under Alternatives 2 and 3 may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project Area, but would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 71). All determinations were made based on implementation of the conservation measures listed in Appendix A of the EA.

In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of open land habitats and early successional aspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Populations of wildlife associated with early successional habitats are likely to increase in response to the proposed restoration activities (EA, pgs. 3-81 and 82). Thus, this project would provide a habitat that meets the requirements for the Karner blue butterfly and other species that rely on the savanna ecosystem.

Comment 67C: We acknowledge the effects that result from development and fragmentation. Both are addressed in the EA on the following pages:

Development: pages 3-16, 17, 18, 39, 42, 68, 69, 76, 85, 86, 93, 94, 99, 100, 110, 149, 159, 168, 180, and 181
Fragmentation: pages 3-42, 85, 86, 91, 93, 94, 95, 98, and 100

The U.S. Forest Service only has jurisdiction over the activities that occur on National Forest System lands.

Comment 67D: We acknowledge your opposition to the Savanna Ecosystem Restoration project.
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Commenter: Harley Routley, Jr.
Response:
Comment 68A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project. As a species, the Karner blue butterfly (KBB) no longer exists in many places it once did. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. Karner blue butterflies occur only in healthy oak savannas. A savanna is half way between a forest and a prairie. It has scattered trees with many grasses and wildflowers. Savannas are the world's most endangered ecosystem. They are more endangered than rainforests or wetlands. Only 0.02% of the savanna in Michigan is left, which is why Karner blue butterflies are so close to extinction. There are many other endangered plants and animals in savannas: Ottoe skippers, Persius duskywings, prairie smoke, side oats grama, Allegheny plum, etc. Good Karner blue habitat is also great turkey habitat and great deer habitat. Savannas are better hunting grounds than forests or prairies because they are high in edge, habitat diversity, and wildlife food. Savannas have greater diversity of plants than any other ecosystem in Michigan. (Chris Hoving, DNRE Endangered Species Coordinator)

The primary objective of the Savanna Ecosystem Restoration Project is to establish and maintain suitable habitat that will support two large viable KBB metapopulations (i.e. the Otto and White River Metapopulation Areas) in the Muskegon Recovery Unit (USDA 2004, EA, pg 1-2). It is acknowledged that the activities associated with this project would impact wildlife (both individuals and populations) and their habitat within the Project Area. The effects on wildlife were discussed in the EA (pgs. 3-41 thru 103). Included in these effects are benefits to wildlife populations due to the creation/restoration of habitat. The types of effects on that would occur on wildlife would be dependent on the habitat requirements of the species. These were discussed (by habitat type) within the EA:

> *"Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types. Proposed vegetative management activities would increase the quantity and quality of open land habitats (e.g., openings, savanna/barrens) and early successional aspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early successional vegetative types by: maintaining open areas; providing a diversity of foraging*

habitats; promoting nectaring sources from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas." (EA, pgs. 3-81 and 82)

"Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successional vegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer. Overall, vegetative management activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal" (EA, pg. 3-82).

"Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to open land habitats (e.g., openings and savannas/barrens) and early successional forest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, red shouldered hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future." (EA, pgs. 3-90 thru 91)

"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles, and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats. Overall, vegetative management activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal." (EA, pg. 3-98).

We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would be permitted in two circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.

2) The strip or spot treatment of discrete patches of NNIS and individual stump sprouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur (up to 360 acres). (EA, pgs. 2-4, 3-10, and 25)

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of EA. Like the Integrated Pest Management (IPM) practices common in agriculture and other forestry applications, the use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness. Some of these methods were described in the EA (pgs. C-10 and 11):

Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are Restricted-Use. All herbicides will be applied at or below the legal limit for application as established under the auspices of the U.S. Environmental Protection Agency.

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Commenter: Tom Ryder

Response:

Comment 69A: Consideration to the effects that this project would have on local real estate markets was given for the three alternatives analyzed for the Savanna Ecosystem Restoration Project, as follows:

> Alternative 1
>
> *"Fluctuations in property values may occur due to local, state, or national market trends and as a result of the site-specific characteristics of individual properties. Individual consumers have little control over the market trends in real estate. The site-specific values associated with individual properties are in some ways related to personal preference. For example, one person may place more value on a solitary dwelling in a country setting, while another may place more value on an urban dwelling with neighbors close by. Therefore, management activities that affect an existing environment may decrease the value of that environment to one landowner and increase the value of the environment to another. This alternative would continue to provide adjacent landowners with an environment that is consistent with what has been present historically."* (EA, pgs. 3-210 and 211)
>
> Alternatives 2 and 3
>
> *"As a result of the activities associated with the creation and restoration of savanna, Alternatives 2 and 3 would alter the viewshed of adjacent private landowners within portions of the Project Area. While these changes may impact the perceived property values to the existing private landowners, there may be others who would prefer the viewshed that will be created. The projects proposed under these alternatives are not expected to cause fluctuations in the values of real estate within or adjacent to the Project Area, especially when compared with occurring trends across the Northern Lower Peninsula of Michigan."* (EA, pg. 3-212)

Purchasing private land for inclusion in the National Forest System is a separate process from project-level NEPA (such as the Savanna Ecosystem Restoration project) and is not within the scope of this planning effort.

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Commenter: Margot Slater
Response:
Comment 70A: We acknowledge your support for Alternative 2 as the preferred alternative**.**

Comment 70B: The majority of road closures included in this project occur within the White River Semiprimitive Nonmotorized Area (WRSNA). As stated in the EA (pg. 1-8):

> "*Recreational use (such as dispersed camping, hunting, and horseback riding) is high throughout the area and impacts to occupied KBB habitat from these activities are occurring."*

The need for the road closures in this area is also identified in the EA (pg. 1-9):

> *"Protection of KBB habitat while providing a semiprimitive, nonmotorized recreational experience."*

Road closures within the WRSNA to achieve the desired future condition of Semiprimitive Nonmotorized are identified in the Forest Plan standards (S) and guidelines (G) for Management Area 6.1 (pg. III-6.1-11):

7700 TRANSPORTATION SYSTEM

I Semiprimitive Areas

A	*Close all Forest Service roads to public motorized vehicles except for emergency and administrative use. See 2300 II A 5 for an exception.*	***G***

In addition, there is further guidance in the Forest Plan that relates to the management for Karner blue butterfly (Forest Plan, pg II-26):

G Karner Blue Butterfly

1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

As it pertains to this area and this trail the Forest Plan direction for management includes (Forest Plan, pg. III-6.1-6):

11 White River

d.	*Trail locations will avoid concentrated areas of wild lupine and other nectar plants utilized by the Karner blue butterfly and other associated sensitive species.*	***S***

Therefore, the closing of Forest Service roads and the development of the designated nonmotorized trail within the WRSNA have been included because it is within (6.1),

Semiprimitive Nonmotorized. These actions serve additionally to protect the habitat for the KBB (i.e. protection of wild lupine). In order to accommodate the existing dominant recreational uses in this area with the management activities that are necessary for the KBB, the existing trail along the river was identified as the best location and was included in Alternative 2 of the project.

The Forest Roads that would be closed to motor vehicles and horse use under Alternatives 2 and 3 would remain open for other nonmotorized uses. It should be noted that the existing road system in this area includes a combination of jurisdictions; U.S. Forest Service and Oceana County Road Commission (OCRC). The U.S. Forest Service has no jurisdiction over the roads that are claimed and maintained by the OCRC and their status, open or closed, would not be changed by the activities proposed in the Savanna Ecosystem Restoration Project.

Comment 70C: We acknowledge your concerns about emergency vehicle access within the WRSNA. The Forest roads within the WRSNA that are currently open (seasonally or year round) and that would be closed (year round) under Alternatives 2 and 3 include: FR5306, FR9045, FR5295, FR7992, FR5315, and FR9353. According to *Table 3.41: Alternatives 2 and 3 Road System Proposals in the White River Portion of the Project Area,* all of these roads would be "*closed to motorized vehicles and stored for administrative use*" (EA, pg. 3-195). The "storage" of U.S. Forest Service roads includes the placement of gates that would allow access into remote areas for both administrative and emergency vehicle access. In addition, the existing county roads would be left open in this area. These include: 148th, 152nd, 160th, and 168th Avenues, and Winston and Arthur Roads (adjacent) (EA, pg. 3-195). These roads would continue to provide access to emergency vehicles throughout this portion of the Project Area under all of the alternatives.

The U.S. Forest Service uses a classification system called the Recreation Opportunity Spectrum (ROS) to help describe differences in recreation settings, opportunities and experiences, and help guide management activities. Recreation settings vary from primitive, where there are more opportunities for self-reliance, to rural, which offers more facilities, better access, and opportunities to interact with other recreationists. In between these two ends of the spectrum are Semiprimitive Nonmotorized, Semiprimitive Motorized, and Roaded Natural classes. Almost 87% of the one million acres of federal land within the boundaries of the Huron-Manistee National Forests are inventoried as Roaded Natural or Rural by this system (HMNF FEIS, pg. III-275). Within these two classes the opportunity to pursue trail riding, hiking, wildlife viewing, and driving for pleasure (among others) are common. This compares with the Semiprimitive Nonmotorized Areas, where users can expect a high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, challenge, and risk.

Alternatives 2 and 3, the resulting transportation system in this area would meet the Forest Plan direction for Semiprimitive Nonmotorized Areas (Management Area 6.1), as described in the EA:

> "*In comparison: These alternatives would provide the minimum amount of motorized public access throughout the WRSNA. The resulting road density (1.0 miles/square mile) would be within the Forest Plan desired road density for Management Area 6.1 (0-1 miles/square mile) and would be in accordance with the Forest Plan Guideline to: "Close all Forest Service roads to motorized vehicles except for emergency and administrative use.*" (pg. 3-199)

Comment 70D: Your concerns about the ability to park horse trailers are acknowledged. The site for the parking lot off of Arthur Road that is identified in Alternative 2 was selected for a variety of reasons: 1) it was not located in close proximity to existing Karner blue butterfly habitat; 2) it is centrally located (east and west) across the northern boundary of the WRSNA; 3) it can be accessed by a county road (Arthur); and 4) the existing topography and vegetation would allow for future expansion (if necessary). This parking lot would be available for use by all user groups. In addition, other locations on National Forest System lands that are east of the designated parking lot and north of the WRSNA would continue to be available for the parking of horse trailers.

Comment 70E: The area impacted by campsites within the Project Area was considered in the EA by location, with the Whiter River and Otto areas each having approximately 38 sites. This project proposes to reduce those in the White River area from 38 to 11. Of the 11, there would be 5 medium sites, 3 large sites, and 3 x-large sites available for motorized vehicle-dependent camping within the WRSNA (see also the response to 70C).

The following describes the dispersed camping sites identified in the Otto area (EA, pg. 3-130):

> *"Utilizing the same size parameters identified for the White River Metapopulation Area, the Otto Metapopulation has approximately 19 small sites, 9 medium sites, 7 large sites, and 3 x-large sites."*

There are no proposed changes to the dispersed sites in the Otto area as a result of this project. Therefore, when considering the Project Area as a whole, this would leave 19 small sites, 14 medium sites, 10 large sites and 6 x-large sites available for motorized vehicle-dependent camping. Dispersed camping that is not reliant on motorized vehicles would continue to be allowed throughout the Project Area.

The designation of campsites within the WRSNA was included as a Standard in the Forest Plan (pg. III-6.1-6):

11 White River			
	a	*Camping areas and sites will be designated. Sites and areas will avoid Karner blue butterfly habitat.*	***S***

The locations selected for designated sites must not only take into consideration the existing types and amount of use of the area, but also that sites are selected that would not be likely to have adverse impacts to the activities associated with the creation/restoration of savanna.

Comment 70F: We acknowledge the experiences that you have had within the Project Area.

Comment 70G: We acknowledge the information that you sent regarding horses as a potential vector for the spread of NNIS. The spread of NNIS related to horse manure was discussed in the EA (pgs. 3-33, 34, 66, 67, 75, 76, 84, 92, 93, 99, 139, 164, 166). The following references were used to prepare the effects discussion in the EA:

Campbell, J.D., D.J. Gibson. 2001. The Effect of Seeds on Exotic Species Transported via Horse Dung on Vegetation Along Trail Corridors. Plant Ecology. 157:23-51. ***(This reference is also cited in the abstract that you submitted with your comment.)***

Landsberg, J., B. Logan, and D. Shorthouse. 2001. Horse Riding in Urban Conservation Areas: Reviewing Scientific Evidence to Guide Management. Ecological Management and Restoration. 2(1): 36-46.

Pickering, C.M., and A. Mount. 2010. Do Tourists Disperse Weed Seed? A Global Review of Unintentional Human-Mediated Terrestrial Seed Dispersal on Clothing, Vehicles, and Horses. Journal of Sustainable Tourism. 18(2):239-256.

Wells, F.H., W.K. Lauenroth. 2007. The Potential for Horses to Disperse Alien Plants along Recreational Trails. Range and Ecological Management. 60:574-577.

Westendorf, M. 2009. Horses and Manure. Fact Sheet FS036. Rutgers University, New Brunswick.

Cole, D. N., D.R. Spildie. 1998. Hiker, Horse and Llama Trampling Effects on Native Vegetation in Montana, USA. J Environ. Manage. 53: 61-71.

Deluca, T.H., W.A. Patterson, W.A. Freimund, D.N. Cole. 1998. Influence of Llamas, Horses, and Hikers on Soil Erosion from Established Recreation Trails in Western Montana, USA. Environ. Management. 22: 255-262.

Pickering, C.M., W. Hill, D. Newsom, Y.F. Leung. 2009. Comparing Hiking, Mountain Biking and Horse Riding Impacts on Vegetation and Soils in Australia and the United States of America. J. Environmental Management xxx: 1 – 12.

Comment 70H: We acknowledge your support of quiet uses on National Forest System lands.

Comment 70I: Discussion of House Bill 4610 and Senate Bill 578 (known as the "Right to Ride" Bills) was not included in this analysis. National Forest System lands are not directly affected by the contents of this bill.

Comment 70J: We acknowledge your support for the comments submitted by Christine Hubert on the Savanna Ecosystem Restoration Project. The information requested under the Freedom of Information Act has been provided.

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Commenter: Carole Stiles

Response:

Comment 71A: We acknowledge your opposition to the Savanna Ecosystem Restoration project. The Karner blue butterfly is a federally endangered species that can be confused with other blue butterflies. The Karner Blue Butterfly Recovery Plan includes a discussion on how to differentiate between KBB and other butterfly species that are similar in appearance (pages 5 and 6 USFWS, 2003). Based on variation in wing pattern and genitalic morphology, the KBB was described as a subspecies of Lycaeides melissa 66 years ago by Vladimir Nabokov in 1944. However, recently, population-genetic evidence has been discovered supporting the conclusion

that the KBB is a unique evolutionary lineage and thus should be elevated to that of a distinct species, Lycaeides samuelis (Forister et al. 2011).

Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly from trending toward extinction. The primary objective of the Savanna Ecosystem Restoration Project is to establish and maintain suitable habitat that will support two large viable KBB metapopulations (i.e., the Otto and White River Metapopulation Areas) in the Muskegon Recovery Unit (United States Department of Agriculture (USDA) 2004) (EA, pg. 1-2). It is also acknowledged that the activities associated with this project would impact wildlife (both individuals and populations) and their habitat within the Project Area. The effects on wildlife were discussed in the EA (pgs. 3-41 thru 103). The displacement of wildlife related to this project is discussed in the EA (pages 3-56, 57, 65, 67, 78, 79, 88, 91, 95, and 96).

The biologists determined that the activities proposed under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or sub-populations of wildlife, fish, and plant species, but would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation treatments are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Comment 71B: The estimated costs and revenues for this project are displayed in the EA in *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (pg. 3-206) and *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (pg. 3-209). More specifically, the economics related to the implementation of this project are discussed on pages 3-204 thru 3-212 in the EA. In the short-term, the economic benefits to the area would include (pg. 3-211):

> *"… additional employment opportunities associated with timber harvesting activities and the creation and restoration of the savanna ecosystem. Employment opportunities would likely be in the form of contractors and seasonal and permanent staff. Included would be such activities as: timber sale layout and administration, timber harvesting, timber stand site preparation, regeneration surveys, savanna site preparation, NNIS/savanna herbicide application, seeding and planting, road and parking lot construction and maintenance, and wildlife surveys. Further contributions to the economy would occur through the purchasing of materials and supplies necessary to accomplish the work.*

Profits from the timber harvest are sent to the Department of Treasury, with 25% being sent to the respective counties where the harvesting occurs. However, a portion of the timber sale receipts can be used for reforestation and other wildlife habitat improvement activities.

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Commenter: Alice and Jackai Szukai

Response:

Comment 72A: We acknowledge your opposition to the Savanna Ecosystem Restoration project.

Comment 72B: The identification of the historic ecosystems that occurred in specific areas is determined through a combination of historic records and the existing characteristics of the vegetation and soils of an area. To date, the most thorough historic account of the ecosystems that existed in Michigan prior to settlement has been compiled by Albert and Comer (2008) using the General Land Office Surveys. The complete reference is as follows:

> *Comer, P.J. and D. A. Albert. 2008. Atlas of Early Michigan's Forests, Grasslands, and Wetlands: An Interpretation of the 1816-1856 General Land Office Surveys. MNFI. Michigan State University Press. Lansing, MI. 107 pp.*

An excerpt from this atlas best describes these surveys (pgs. viii and ix):

> *"The Township plat maps and transcribed field notes of the initial General Land Office (GLO) land surveys provide the best available records of Michigan's native landscape (Bourdo, 1956). The GLO was established by the federal government in 1785 to survey the nation's western territorial lands. Lands of what was then the Michigan Territory (before statehood in 1837) had to be surveyed prior to their sale to private individuals. The surveys were conducted in Michigan by deputy surveyors of the General Land Office between 1816 and 1856, before widespread European settlement. Base and meridian lines had been established several years earlier. The survey was, therefore, conducted just before the logging era, which saw the most dramatic transformation in Michigan's natural landscape since the last glaciation."*
>
> *"Between 1816 and 1856 Government Land Office surveyors mapped a one-mile grid across the surface of Michigan, starting in the southeast near Lake Erie and finishing at the Wisconsin border along Lake Superior. The surveyor's maps opened the lands of Michigan to land claims, settlement, and sale, and large parts of the grid were gradually transformed into our present road system.*
>
> *The Land Office surveyors were not only creating a grid for land ownership, they also were recording information about the land and its vegetation, describing fertility of the soil, mapping bedrock exposures, and recording the size and types of trees. Along the way, surveyors also made reference to trails and other features established by Native Americans. In addition, they noted locations of natural disturbances to vegetation, such as areas previously burned by wildfire and areas of blow-down trees from severe wind storms."*

In this atlas, the majority of the Project Area is recorded as being historically forested with the white pine-white oak and white pine-mixed hardwood forest types. However, there are portions of the Project Area that are recorded as consisting of the oak/pine barren type (Ibid,

pgs. 29 and 39). The description for this ecological type as it pertains to this response is as follows:

> *"White pine and white oak were the characteristic dominants of the oak-pine barrens. These barrens also occurred on extreme fire-prone sand plains, adjacent to more extensive forests or white pine and white oak. The oak –pine barrens generally occupied a zone between the more southern oak barrens and the more northerly pine barrens…..Prairie-associated grasses and forbs were probably quite common in the barrens in both the Lower and Upper Peninsulas…..The rare Karner blue butterfly (Lycaeides Melissa samuelis), whose caterpillars feed on the foliage of the common lupine (Lupinis perennis), is found largely within openings previously dominated by open oak-pine barrens in the western Lower Peninsula."*

The historical presence of the oak/pine barren ecological type is also described in the EA:

> *"Historically, approximately 10 percent (or 60,000 acres) of the Manistee National Forest was made up of some type of savanna system (HMNF Programmatic Biological Evaluation 2005). Fire was the major disturbance factor influencing the creation and maintenance of these systems, with the most open areas likely burning in successive years (Corner pers. comm. 2003c.f.; USDA Forest Service 2005). In an unaltered condition, savannas support a diverse flora including numerous species that are characteristic of dry prairies. A number of plant and animal species were reduced in frequency of occurrence and density as these communities became closed canopy forests (VandeWater 2004). The savanna ecosystem is now considered rare throughout its historic range in Michigan, with the majority having either been destroyed through land conversion or altered as a result of plant succession (Chapman, et al. 1995)."* (EA, pg. 3-18)

> *"Openings, prairies, savannas, and barrens have declined within the Huron-Manistee National Forests (HMNF) over the past century due to extensive reforestation, increased fire control efforts, and the processes of natural succession. Remnant openings, prairies, savannas, and barrens are filling in with fire intolerant woody and shade tolerant herbaceous species. As a result, suitable habitat for the Karner blue butterfly (KBB), a federally-listed Endangered species and Terrestrial Management Indicator Species associated with oak/pine savanna and pine barren communities, is becoming scarcer. The decline in KBB habitat quality and quantity within the HMNF has led to a reduction in occupied subpopulations."* (EA, pg. 3-41)

72C: Public involvement for the Savanna Ecosystem Restoration Project was extensive (EA, pg. 1-12) Public comments are used to define the issues associated with a particular proposal. These issues are determined to be either not relevant or relevant to implementing the Proposed Actions. Those determined to be relevant can be used to determine alternate actions for achieving a project's Purpose and Need. Alternative 1, the No Action Alternative was analyzed as part of this project. This alternative is included in the analysis to provide a baseline for describing the effects of implementing the action alternatives and in response to comments against a particular proposal and in support of taking "no action".

Under all of the alternatives associated with this project, hunting, fishing, hiking, and snowmobile use, as well as other recreational activities, would continue. There would be no changes to the county roads system in the Project Area as a result of this project, as these roads are under the jurisdiction of the Oceana County Road Commission. While access utilizing the existing U.S. Forest Service Road system would change under these alternatives, some level of

motorized access would continue utilizing the county road system in place in the WRSNA and the county and U.S. Forest Service road system in the Otto portion of the project. This road system would provide some level of vehicular access into the area, for those seeking a motorized recreational experience while providing opportunities for those wanting a nonmotorized experience.

Comment 72D: We acknowledge your use of the National Forest System lands for a variety of recreational activities.

Comment 72E: We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would be permitted in two circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete locations of NNIS and individual stump sprouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur up to approximately 360 acres (EA, pgs. 2-4, 3-10 and 25).

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness. Some of these methods are described in the EA (pgs. C-10 and 11).

Risk Assessments have been conducted on all of the herbicides proposed for use in the Savanna Ecosystem Restoration Project. None of these herbicides are considered Restricted-Use. The products included for consideration are the same or similar to those used in such activities as agriculture and the control of undesirable woody vegetation in rights-of-ways. In previous restoration projects on National Forest System lands (i.e. Newaygo Experimental Forest and the White River demonstration plots), monitoring has indicated that physical and mechanical means are simply not enough to control natural regeneration (i.e. stump sprouting) after tree harvesting has occurred. Therefore, the use of herbicides to control woody vegetation has been included for use in the areas where this becomes problematic in the restoration or establishment of savanna. The implementation of this project would occur through adaptive management. While it is not anticipated that the use of herbicides to control the natural regeneration of trees would be necessary in all of the areas proposed for savanna creation/restoration, this is how it has been presented and analyzed. This would account for the maximum that may be necessary to accomplish the project, if other physical (i.e. prescribed burning) or mechanical means (i.e. cutting and stumping) of control prove not to be sufficient in any location. Conservation Measures (EA, Appendix A) have been developed and will be used to ensure the maximum amount of protection is provided to humans and the environment. All herbicide applications will strictly adhere to regulatory limits established on the product labels that follow the regulations established by the U.S. Environmental Protection Agency.

Although vegetative management treatments, including herbicide application, may have adverse and beneficial direct and indirect effects on wildlife, fish, and plants within the Project

Area, the biologists determined that the treatments would not likely cause a trend towards federal listing or loss of viability for Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71). Although vegetative management activities under Alternatives 2 and 3 would likely adversely affect the Karner blue butterfly in the short-term, the treatments associated with KBB opening restoration and savanna creation, including herbicide application, are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71). All determinations were made based on implementation of the conservation measures listed in Appendix A.

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Commenter: Kathy Thompson

Response:

Comment 73A: We acknowledge your opposition to the Savanna Ecosystem Restoration project. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent the federally endangered Karner blue butterfly (KBB) from trending toward extinction. Under all of the alternatives associated with this project, hunting, hiking, camping, fishing, kayaking, and other recreational uses would continue to be allowed throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1, unless areas are posted closed. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed. Under Alternatives 2 and 3, the intent is not to eliminate recreational use in the area. Under these alternatives, it is anticipated that the recreational use within the WRSNA would shift away from motorized-dependent recreational activities to forms of recreation not dependent on motorized access, as described under Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user(s) to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other public or private lands that accommodates their recreational use. This is described for Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic*

recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."

Comment 73B: The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area. The effects to wildlife would be dependent on the habitat requirements of the species. These effects were addressed within the Environmental Assessment (EA) and Biological Assessment/Evaluation (BA/BE):

"Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types." (EA, pg. 3-81)

Proposed vegetative management activities would increase the quantity and quality of open land habitats (e.g., openings, savanna/barrens) and early successional aspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early successional vegetative types by: maintaining open areas; providing a diversity of foraging habitats; promoting nectaring sources from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas (EA, pgs. 3-81 and 82).

"*Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successional vegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer."* (EA, pg. 3-82)

Overall, activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-82 and 85).

"Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to openland habitats (e.g., openings and savannas/barrens) and early successionalforest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, redshouldered

> *hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future."* (EA, pgs. 3-90 and 91)

"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area." (EA, pg. 3-91). Overall, activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest types within the Project Area, and any adverse effects would be expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-88, 89, 91, 92, and 93).

> *"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles, and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats."* (EA, pg. 3-98)

Overall, activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-96 thru 99). Thus, the biologists determined that the activities proposed under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or sub-populations of wildlife, fish, and plant species, but would not likely cause a trend towards federal listing or loss of viability of Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations in the long-term by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Therefore, there would be both adverse and beneficial impacts anticipated to occur to the wildlife as a result of the activities associated with this project depending on the habitat requirements of the species.

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Commenter: Tom Thompson of White River Watershed Partnership

Response:

Comment 74A: We acknowledge your support for the vegetative management activities that are proposed in the Savanna Ecosystem Restoration project.

Comment 74B: We acknowledge the need for angler access to the White River. This was discussed in the EA (pg. 3-153):

> *"There are numerous other developed recreation sites on National Forest lands on the White River, located just outside of the Project Area, that provide access for boating, canoeing, kayaking, tubing, camping, and fishing. These include: St. Hubert's, Podunk, Sischo Bayou, and Diamond Point. These developed sites offer both walk-in and motorized access to the main branch of the White River. Two other river access sites, Taylor Bridge and Fruitvale Road, are located on county land just outside of the Project Area* **(***see Map 3.8***).** *Although none of the sites that are listed are located within the WRSNA, they are directly across from this area and provide access to recreationists floating or fishing the river and areas for camping. The development level and recreational opportunities available at these sites would not change with any of the alternatives included in this project."*

Under Alternatives 2 and 3 of this project, a parking area would be established at the east end of Winston Road (see the Recreation Management Maps at the end of Chapter 2 in the EA). The South Branch of the White River is accessible a short distance from this site and the access would be considered "walk-in".

Comment 74C: We acknowledge your concerns over the location of the designated non-motorized trail system within the WRSNA. In 1988, the White Cloud District of the Huron-Manistee National Forests completed the White River Opportunity Area Analysis (OA). Included in this project was the development of 17 miles of hiking/cross-country ski trail. While initial efforts were made in the development of a trail along the South Branch of the White River, the trail was never formally designated and after the initial development, little to no effort was made to maintain it to standard. Over time, the use of the White River Area (and more specifically this trail) by horses has increased. The trail was not developed, nor has it been maintained, for the existing types and numbers of users (i.e. horses).

Since the completion of the OA Analysis, the Karner blue butterfly (KBB) has become listed as an endangered species. As such, the U.S. Forest Service is required to take actions to limit the impacts on the KBB. As it pertains to the White River Area and any trails, the Forest Plan direction for management includes (pg. III-6.1-6):

11 White River

d.	*Trail locations will avoid concentrated areas of wild lupine and other nectar plants utilized by the Karner blue butterfly and other associated sensitive species.*	***Standard***

To provide a non-motorized trail that would accommodate the current recreational uses in this area while minimizing impacts to existing and future KBB habitat, the established trail along the river was identified as the best location and was included in Alternative 2. To protect the integrity of the river corridor the following Conservation Measures would be incorporated (EA, pg. A-5):

> *"If, at any time, horse use compromises the integrity of Karner blue butterfly habitat, cultural resources, or other recreational attributes of the White River Semiprimitive Nonmotorized Area, then this use will be removed from this area and relocated to other, more suitable locations on National Forest System lands."*
>
> *"If, at any time, the non-motorized trail located in Management Area 9.2 compromises the qualities of the White River, a Wild and Scenic Study River, then the trail will be removed from this area and may be relocated to other, more suitable locations on National Forest System lands."*

The impacts that horses are having along the river is also discussed in the EA (pgs. 3-149 and 150):

> *Some of these user-created trails are entrenched and heavily eroded with areas leading down to the White River for watering horses and crossing the river, causing soil compaction, bank erosion, and vegetation loss. Some trails have also been developed along hills with a slope greater than 20%.*

Under Alternative 1, the water quality effects related to recreation include the following:

> *"Impacts to the water quality of the White River could occur from runoff from campsites and trails/roads located on its banks (see Maps 3.6-3.10)."* (EA, pg. 3-158)
>
> *"Camping and driving for pleasure are activities that would also continue potentially impacting soils, water quality of the White River, occupied or potential KBB habitat, and native vegetation."* (EA, pg. 3-159)

Under Alternative 2, the water quality effects related to recreation include the following:

> *"Concentrating use on a single trail system would likely compact soils, widen and deepen the tread, possibly widen the trail corridor, increase the erosion of soils, increase the amount of manure on the trail, increase the run-off of animal waste into waterways, and possibly increase non-native invasive species along the trail (Pickering, 2009). The combination of trail designation, site design, and the implementation of conservation measures would reduce the impacts from what is currently occurring from unmanaged use in the entire WRSNA."* (EA, pg. 3-164)
>
> *"Horseback riders would no longer be allowed to take their horses into Knapp Lake or the White River, at any location, for riding or watering their horses. Alternative 2 would limit the locations for watering horses to two designated areas along the White River where horseback riders would be allowed to use buckets to get water for their horses. This action would limit run-off of animal waste into the White River and other waterways, improving water quality (Pickering 2009). This*

requirement would place an additional responsibility on those who choose to ride horses in the WRSNA. This requirement would displace those users who don't want limitations placed on their activities." (EA, pg. 3-166)

Under Alternative 3, the water quality effects related to recreation include the following:

"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River. These areas may also expect to receive the greatest impacts on the resource as dispersed horse camping areas become established in these areas. The impacts (i.e. user created trails and camp sites, nonnative invasive species, and water quality concerns) would be expected to increase in this area and other National Forest areas as more people recreate with their horses." (EA, pg. 3-171)

Comment 74D: Designated trail systems are open, unless posted closed. For the designated non-motorized trail in the WRSNA, it would be the responsibility of recreational users to be aware of the risks of using the trail at the various times of the year and take the necessary safety precautions.

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Commenter: Diane Van Wesep

Response:

Comment 75A: We acknowledge your support of Alternative 2 as the preferred alternative for the Savanna Ecosystem Restoration project and your willingness to participate in the maintenance of the proposed trail system within the WRSNA.

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Commenter: Dan Vanden Berg

Response:

Comment 76A: We acknowledge the closing of the bridge on 152nd Avenue. This road is under the jurisdiction of the Oceana County Road Commission. We recognize that the private landowners within the WRSNA require access to their property and that the closing of 152nd Avenue has made that access difficult. We support the use of FR 5317 to accommodate this access.

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Commenter: Jo Anne Vitkus

Response:

Comment 77A: We acknowledge your opposition to the Savanna Ecosystem Restoration project.

The management activities that are proposed in this project might have adverse and beneficial direct and indirect effects on wildlife present within the Project Area. The effects to wildlife would be dependent on the habitat requirements of the species. These effects were addressed within the Environmental Assessment (EA) and Biological Assessment/Evaluation (BA/BE):

"Much of the habitat change expected under the Proposed Action would likely have beneficial indirect effects to dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, and other wildlife associated with early successional vegetative types" (EA, pg. 3-81).

Proposed vegetative management activities would increase the quantity and quality of open land habitats (e.g., openings, savanna/barrens) and early successional aspen forest. Oak/aspen clearcuts would regenerate aspen and provide the age-class diversity required for whip-poor-will and ruffed grouse. Opening restoration and savanna creation activities would increase habitat quantity and quality for wildlife associated with early successional vegetative types by: maintaining open areas; providing a diversity of foraging habitats; promoting nectaring sources from shrubs and wildflowers, larval host plants including wild lupine, and savanna plant species such as warm season grasses including bluestem; and providing other features important to wildlife, such as sunning areas, roosting sites, and nesting areas (EA, pgs. 3-81 and 82).

> "*Other wildlife species that may experience an increase in habitat quantity and quality, and subsequently population numbers, following treatments to enhance early successional vegetative types within the Project Area include, but are not limited to: American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer.*" (EA, pg. 3-82)

Overall, activities proposed under Alternatives 2 and 3 are expected to have primarily beneficial direct and indirect effects on wildlife associated with early successional vegetative types within the Project Area, and any adverse direct and indirect effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-82 and 85).

> "*Management activities under Alternatives 2 and 3 would likely have a greater effect on local populations of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types through habitat change. Savanna creation, KBB opening restoration, oak/aspen clearcuts, red pine thinning, and prescribed burning would reduce the amount of mid- to late-successional forest habitat within the Project Area. Approximately 3,000 acres of mature forest would be converted to open land habitats (e.g., openings and savannas/barrens) and early successional forest. As a consequence, species dependent on hard mast production (e.g., red-headed woodpecker, wild turkey, squirrels, white-tail deer) may experience a reduction in food availability, which may subsequently lead to a reduction in prey availability and abundance for foraging northern goshawks, red shouldered hawks, bald eagles, and black bears. While savanna creation and KBB opening restoration may reduce hard mast production over the long-term, oak/aspen clearcuts, Scots pine removal, and red pine thinning would likely reduce hard mast production over the short-term, as stands receiving these treatments would regenerate to mature forests in the future.*" (EA, pgs. 3-90 and 91)

"Because a relatively small percentage (18%) of the Project Area would be affected by vegetative management activities, reductions in foraging and breeding habitat would not likely decrease the overall numbers of northern goshawks, red-shouldered hawks, bald eagles, cerulean warblers, Louisiana waterthrushes, prothonotary warblers, eastern box turtles, black bears, and other wildlife associated with mid- to late-successional forest types within the Project Area." (EA, pg. 3-91). Overall, activities under Alternatives 2 and 3 would have both beneficial and negative direct and indirect effects on wildlife associated with mid- to late-successional forest types within the Project Area, and any adverse effects would be expected to be minimal with

the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-88, 89, 91, 92, and 93).

> *"The proposed vegetative management activities under Alternatives 2 and 3 may also have beneficial indirect effects to the foraging and breeding habitat of Blanding's turtles, wood turtles, and other water-oriented wildlife species. Management for early successional vegetative types may increase the quantity and quality of interspersed forest openings and uplands, increasing the availability of sunning and nesting areas, and increasing native grasses, forbs, and berry producing shrubs (i.e., increasing the abundance and diversity of forage species). Control of Scots pine and other non-native invasive species may also increase native species richness and diversity, increasing available for food and cover for wildlife associated with aquatic habitats."* (EA, pg. 3-98)

Overall, activities under Alternatives 2 and 3 are expected to have adverse and beneficial direct and indirect effects on wildlife associated with aquatic habitats within the Project Area, and any adverse effects are expected to be minimal with the implementation of the conservation measures described in Appendix A of the EA (EA, pgs. 3-96 thru 99). Thus, the biologists determined that the activities proposed under Alternatives 2 and 3 may have no effect, a beneficial effect, or impact individuals or sub-populations of wildlife, fish, and plant species, but would not likely to cause a trend towards federal listing or loss of viability of Regional Forester's Sensitive Species (BA/BE, pgs. 99, 100, 103, 128, and 129). In addition, activities under Alternatives 2 and 3 are expected to have insignificant or discountable indirect effects on Indiana bat, and thus may affect, but are not likely to adversely affect the Indiana bat (BA/BE, pg. 71).

Activities under Alternatives 2 and 3 also might have adverse direct effects, and adverse and beneficial indirect effects, on the Karner blue butterfly, and thus may affect, likely to adversely affect the Karner blue butterfly in the short-term. However, KBB opening restoration and savanna creation are necessary to preserve, enhance, and create habitat for KBB to promote persistent populations within the Otto and White River Metapopulation Areas. Without these treatments, KBB populations would likely continue to decline within the Otto and White River Metapopulation Areas, and surviving subpopulations would become even more isolated and disconnected, and thus subject to a higher risk of extirpation from catastrophic events. In the long-term, KBB opening restoration and savanna creation are expected to have an overall beneficial effect on KBB populations by increasing the acreage, distribution, and connectivity of suitable habitat with the goal of establishing two large viable metapopulations in the White River and Otto Metapopulation Areas as directed by the KBB Recovery Plan (USDI Fish and Wildlife Service 2003), the DRAFT Management Strategy (USDA Forest Service 2004a), and the Forest Plan (USDA Forest Service 2006b). (BA/BE, pgs. 58 and 71).

Therefore, there would be both adverse and beneficial impacts anticipated to occur to the wildlife as a result of the activities associated with this project depending on the habitat requirements of the species. Further consideration on the effects of this project on wildlife is in the EA (pages 3-41 through 3-103).

Under all of the alternatives analyzed in the Savanna Ecosystem Restoration Project, hunting, hiking, camping, fishing, kayaking, and other recreational uses would continue to be allowed

throughout the Project Area. There would be no restrictions on horse use on National Forest System lands within the Project Area under Alternative 1, unless areas are posted closed. Within the White River Semiprimitive Nonmotorized Area (WRSNA), horseback riding would be limited to a designated trail system under Alternative 2 and eliminated in this area under Alternative 3. There would be no restrictions to horseback riding under Alternatives 2 or 3 on National Forest System lands in areas outside of the WRSNA, unless posted closed. Under Alternatives 2 and 3, the intent is not to eliminate recreational use in the area. Under these alternatives, it is anticipated that the recreational use within the White River Semiprimitive Nonmotorized Area (WRSNA) would shift away from motorized-dependent recreational activities to forms of recreation not dependent on motorized access, as described under Alternative 2 in the EA (pg. 3-167):

> *"This alternative will provide non-motorized recreationists with a relatively contiguous area of public land to meet their recreational needs. These areas are rare on the Huron-Manistee National Forests and are not currently available in Oceana County. This may serve to draw new user(s) to the county to explore the National Forest. The non-motorized experience would be limited to the WRSNA, as on the other side of the White River there will continue to be motorized access for day use or overnight stays. Motorized opportunities will continue to exist in other portions of the National Forest, as well as at many private businesses on private lands."*

It is also recognized that by implementing the activities associated with the action alternatives there may be some users or user-groups that will need to or choose to go to other locations of public or private land that more satisfactorily accommodates their type of recreational use. This is described for Alternative 3 in the EA on page 3-171:

> *"It is likely that recreationists may shift their use of National Forest lands from the WRSNA to other National Forest System lands that are adjacent or close to this area where the historic recreational uses would remain available. The areas that are most likely to see this increase in use will be the Otto area and areas along the eastern side of the White River."*

We acknowledge your comments on the use of herbicides in order to accomplish the activities that are proposed in this project. The use of herbicides in this project would be permitted in two circumstances:

1) The treatment of known existing non-native invasive plant species (NNIS) within the Project Area. Current infestations within the Project Area total approximately 42 acres.
2) The strip or spot treatment of discrete patches of NNIS and individual treatment of stump sprouts (i.e. oak and cherry) in less than or equal to 10% of the areas where savanna creation or restoration activities occur, approximately 360 acres (EA, pgs. 2-4, 3-10, and 25).

Specific information on the herbicides proposed for use in this project and the appropriate tools for application are described in Appendix C of EA. The use of herbicides in this project would occur only after determining that other physical or mechanical means are not sufficient to achieve the desired objective. The methods of treatment selected for specific areas would consider the cost, amount of product needed, efficiency, and effectiveness. Some of these methods are described in the EA (pgs. C-10 and 11).

Risk Assessments have been conducted on all of the herbicides proposed for use in this project. None of these herbicides are considered Restricted-Use. All herbicides will follow uses at or below the legal limit of application as established under the auspices of the U.S. Environmental Protection Agency. The products included for consideration are the same or similar to those used in such activities as agriculture and the control of undesirable woody vegetation in right-of-ways. In previous restoration projects on National Forest System lands (i.e. Newaygo Experimental Forest and the White River demonstration plots), monitoring has indicated that physical and mechanical means are simply not enough to control natural regeneration (i.e. stump sprouting) after tree harvesting has occurred. Therefore, the use of herbicides to control woody vegetation has been included for use in the areas where this becomes problematic in the restoration or establishment of savanna. The implementation of this project would occur through adaptive management. While it is not anticipated that the use of herbicides to control the natural regeneration of trees would be necessary in all of the areas proposed for savanna creation/restoration, this is how it has been presented and analyzed. This would account for the maximum that may be necessary to accomplish the project, if other physical (i.e. prescribed burning) or mechanical means (i.e. cutting and stumping) of control prove not to be sufficient in any location. Conservation Measures (EA, Appendix A) have been developed and will be used to ensure the maximum amount of protection is provided to humans and the environment.

The estimated costs and revenues for this project are displayed in the EA in *Table 3.44: Estimated Revenues and Costs for Harvest Activities* (pg. 3-206) and *Table 3.45: Non-timber Related Costs for the Savanna Ecosystem Restoration Project* (pg. 3-209). It should be noted, upon review of the Environmental Assessment, we identified an error in Table 3.45. In this table, the "Herbicide Woody Vegetation" shows an estimated cost of $1,224,400 to conduct this treatment on 3,061 acres for both Alternatives 2 and 3. This should be shown as an estimate of $122,400 to conduct treatment on 306 acres. As a result, the total costs of non-timber related activities would be reduced to an estimated $1,950,250 from $3,052,250 under Alternative 2 and to an estimated $1,814,550 from $2,916,550 under Alternative 3. This and other errors in the EA are identified on the Draft EA Errata Sheet. No changes are necessary for Table 3.44. Profits from the timber harvest are sent to the Department of Treasury, with 25% being sent to the respective counties where the harvesting occurs. However, a portion of the timber sale receipts can be used for reforestation and other wildlife habitat improvement activities.

As identified in the EA (pg. 3-205):

> *"Under Alternatives 2 and 3, commercial timber harvesting activities would return money from the U.S. Treasury to Oceana and Muskegon Counties for use in education and road maintenance. Timber sale activities have preparation and administration costs, such as employee wages, road construction, and the regeneration of harvested areas that would remain classified as commercial forest land. The amount of income from timber sales is variable based on the type, quality, and quantity of timber. Typically, timber sales produce revenue which is then utilized to conduct other management activities that are within the Project Area. Additional funds that are generated are then returned to the U.S. Treasury."*
>
> *"The timber that is within this Project Area that would be harvested under these alternatives would not be likely to produce enough funds to cover the combined cost of doing this analysis and preparing the sale areas (layout, road improvements, timber marking, etc.). Additional funding*

would be necessary to accomplish the program of work that would be necessary to accomplish the successful restoration of the savanna ecosystem in this area. Due to the adaptive management approach that is used for these activities, the costs associated with these activities are extremely variable. For example, two adjacent areas would likely require different levels of treatments (both in type and scale) to successfully bring the restoration to completion. While prescribed burning alone may be sufficient at one site, an adjacent site may require tree harvesting, tree and stump removal, prescribed burning, and the seeding in of native vegetation. As a result of the differences in these types of treatments, the costs can vary considerably."

Comment 77B: The creation/restoration of the savanna ecosystem type for this project is directly related to the presence of the Karner blue butterfly. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. The Project Area includes the White River and Otto Metapopulation areas (as identified in the KBB Recovery Plan). The Purpose and Need for this project states:

"*Manage permanent openings and/or grasslands to meet species viability needs (Forest Plan). Maintain existing habitat and restore suitable habitats by converting forested stands into savanna for the KBB in the Muskegon Recovery Unit. Maintain sufficient habitat to meet the recovery goals for viable KBB populations within the Otto and White River Metapopulation Areas. Continue savanna/barrens restoration projects within the Muskegon Recovery Unit with emphasis on connectivity between KBB subpopulations, expansion of existing sites, and enhancing attributes within sites (USDI 2003)."*

The sites that are proposed for habitat creation/restoration are based on KBB survey results and on those areas where there is the greatest likelihood of benefitting the species by meeting the recovery goals for viable metapopulations. Due to the low populations of the KBB and their inability to disperse long distances, core areas with the highest populations of KBB need to be targeted for management activities first. While the activities associated with savanna restoration and creation could occur in areas outside of this Project Area, the presence of the Karner blue butterfly in this area make it an area of high priority for this type of treatment activity. Other locations outside of these core areas could then be considered, once the corridors for dispersal were established.

Comment 77C: We believe that the areas that you refer to in this portion of your comment are the demonstration plots that are in the process of becoming established within the WRSNA (in the White River Metapopulation Area). Under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), the District is conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat (EA, pg. 3-69). The purpose of these plots is to determine the best methods for creating and restoring the type of savanna habitat that is appropriate sustaining viable reproducing populations KBB. The District has developed approximately 104 acres of demonstration plots within the White River Metapopulation Area.

Similar demonstration plots would be established within the Otto Metapopulation Area, prior to the implementation of the savanna creation/restoration activities that are included in this project. By applying what it learns from effectiveness monitoring and small scale demonstration projects at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective (EA, pgs. 3-54 and 64).

These demonstration plots were discussed in the EA (pg. 3-64):

> *"Alternatives 2 and 3 would also follow an adaptive management approach, modifying treatments in response to effectiveness monitoring and using demonstration projects to determine the most efficient and effective restoration techniques. This would increase the probability of restoration success within the Project Area. As management activities increase the amount of suitable KBB habitat around and between extant subpopulations and increase dispersal opportunities between occupied and unoccupied habitat patches, the number of occupied KBB subpopulations and the total number of KBB within Otto and White River Metapopulation Areas would likely increase."*

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Commenter: Day Waterman
Response:
Comment 78A: We acknowledge your support and willingness to help in the Savanna Ecosystem Restoration project.
++++++++++
Commenter: David Wilson
Response:
Comment 79A: We acknowledge your forestry experience within the Savanna Ecosystem Restoration Project Area and your support for some of the activities that are included in this project.

Comment 79B: We also acknowledge that creating savanna in currently forested stands is not the "natural path of succession" and that it would be likely to take a lot of effort and resources, as mentioned in your comment. The smaller-scale projects that you are referring to are demonstration plots (approved through a previous analysis) being utilized to determine the most appropriate measures for creating savanna. Under the Savanna/Barrens Restoration Project (USDA Forest Service 2008), the District is conducting a demonstration project to determine the effectiveness of combining several types of mechanical treatments and prescribed burn prescriptions to restore KBB habitat. (EA, pg. 3-69) The District has developed approximately 104 acres of demonstration plots within the White River Metapopulation Area.

This project would approve an additional 48 acres of demonstration plots to be established within the Otto Metapopulation Area, which would be established prior to the implementation of the savanna creation/restoration activities that are included in this project. In these areas, varied methods are applied in different areas to establish the response that may occur due to the types or sequence of treatments or site-specific variations. By applying what it learns from effectiveness monitoring and small scale demonstration projects at the landscape scale, the District will increase the probability of restoration success and make restoration treatments more efficient and cost effective (EA, pgs. 3-54 and 64). On a broader scale, this is referred to as adaptive management.

Information on this approach may be found in the EA (pages 1-11, 3-19, 24, 30, 35, 54, 64, and 206). In adaptive management, success is dependent on the monitoring of treatment areas after activities have occurred. This allows the future treatments to be modified as necessary in order to adjust to site-specific conditions that may vary between sites. This includes such factors as local soil conditions, micro-climate and micro-topographical fluctuations, and the existing

vegetative and seedbank composition. Post-treatment monitoring determines the need, sequence, and intensity of treatment activities for individual areas, as each area is likely to show a different level of response to any particular treatment. As a result of this response, different locations are likely to progress toward the desired future condition at different rates and require different types and levels of treatments.

This adaptive approach is flexible and relies on monitoring to ensure that the desired outcomes are being achieved in one area before beginning work in another. As the creation and restoration of the savanna community type is progressive, it is not our intent that all of the areas that are included in this project would be complete savannas within the 10 year timeframe, rather that these areas would be available for the activities associated with the creation or restoration of savanna, should effectiveness monitoring and the monitoring of the demonstration plots indicate that these actions are appropriate in these areas. If shown to be appropriate, it is anticipated that some level of activity would occur in these areas within the 10 year timeframe. If shown not to be appropriate or that the treatments are not moving this area toward the desired future condition, then vegetative management in this area would need to be reconsidered. We acknowledge that simply planting lupine after extensive site preparation would be short sighted.

Comment 79C: The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action to prevent it from trending toward extinction. In addition to increasing the acreage, distribution, and connectivity of suitable KBB habitat, the savanna creation and opening restoration treatments proposed under Alternatives 2 and 3 would increase the quantity and quality of open land habitats and early successional aspen forest for dusted skipper, hill-prairie spittlebug, frosted elfin, eastern box turtle, redheaded woodpecker, whip-poor-will, ruffed grouse, American woodcock, cottontail rabbit, snowshoe hare, fox and gray squirrel, red and gray fox, coyote, wild turkey, and white-tailed deer (EA, pgs. 3-64, 81, and 82). Populations of wildlife associated with early successional habitats are likely to increase in response to the proposed restoration activities (EA, pgs. 3-81 and 82). Thus, this project would provide a habitat that meets the requirements for the Karner blue butterfly and other species that rely on the savanna ecosystem.

Due to the status of the KBB, there are many Conservation Measures associated with conducting management activities in both occupied and unoccupied habitat (see Appendix A, A-6 through A-9). These measures serve to protect KBB and potential KBB habitat to the greatest extent possible. Use of the adaptive management approach and the established Conservation Measures would likely increase the amount of time needed to implement these activities, while minimizing undesired and irretrievable landscape cover type changes.

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Commenter: Douglas Wine

Response:

Comment 80A: We acknowledge your disappointment with the analysis process for the Savanna Ecosystem Restoration project. During scoping for this project there were many comments received from the public relating to the management of the National Forest System lands within the Project Area. Some of these comments did not fall within the stated Purpose and Need for the project. The Purpose and Need developed for this project was clearly identified in the scoping letter and in the EA (pgs. 1-5 thru 10) and was developed directly from

the Huron-Manistee National Forests Land and Resource Management Plan (Forest Plan) (2006). Comments received that did fall within the Purpose and Need of this project were considered and incorporated into the alternative designs, to the extent possible (EA, pg. 2-1). Some comments resulted in alternatives that were eliminated from detailed study. This process and the rationale for elimination are also described in the EA (pgs. 2-8 and 9).

Comment 80B: The Karner blue butterfly was listed as an Endangered Species in 1992. Under the Endangered Species Act (1973), the U.S. Forest Service is mandated to take action where it occurs on National Forest System lands to prevent it from trending toward extinction. As an Endangered Species, the locations where the Karner blue butterfly currently exist or are able to persist are limited. These areas on the Huron-Manistee National Forests have been identified through the Karner Blue Butterfly Recovery Plan (USFWS, 2003), in conjunction with extensive site-specific wildlife surveys that began in 1997. The sites that are proposed for habitat creation/restoration are based on the survey results and on those areas where there is the greatest likelihood of benefitting the species, utilizing current programmatic and strategic guidance, as described in the EA:

> *"The USFWS KBB Recovery Plan identifies recovery actions and goals across the entire historic range of the butterfly. To guide Forest-level activities needed to meet the objectives of the KBB Recovery Plan, the Huron-Manistee National Forests prepared the DRAFT Huron-Manistee National Forests Karner Blue Butterfly Management Strategy (DRAFT Management Strategy, 2004). The DRAFT Management Strategy (2004) and the USFWS KBB Recovery Plan (2003) were incorporated by reference in the Forest Plan (2006). The Forest Plan contains goals, objectives, and specific guidance on the management of National Forest System lands. Site-specific proposals such as the Savanna Ecosystem Restoration project are developed to implement the Forest Plan. For the SER project, the Forest Plan provides the Purpose and Need of implementation of the KBB Recovery Plan and provides the standards and guidelines that apply to the activities in this project (Forest Plan, pp. II-26)."* (EA, pg. 1-2)

The USFWS identified the following recovery goals for the Otto and White River Metapopulation Areas:

1) Large viable metapopulations (≥ 6,000 first or second brood adults).
2) Minimum of 5 subpopulations with a lupine density of at least 1000 stems/acre for small habitat patches and at least 500 stems/acre for larger habitat patches.
3) Subpopulations that are ≥ 0.62 acres in size, distributed over 2/3 of a ≥ 10 square mile area, with at least 10% (640 acres) of suitable habitat.
4) Connectivity between subpopulations so that the average nearest neighbor distance between sites is 1 kilometer, with a minimum distance of 200 meters, and a maximum distance of 2 kilometers. (see page 2 of the 2009 USFWS Monitoring Report for HMNF KBB).

The scale of the activities under Alternatives 2 and 3 is proposed to meet recovery goals within these two metapopulation areas.

Comment 80C: The description for the delineation of the Project Area is provided in the EA (pg. 1-1):

> *"Contained within the Project Area boundaries are both private and federal lands. Private lands consist of approximately 11,000 acres, while federal lands consist of approximately 15,000 acres. Though private lands are considered in the analysis of environmental effects related to the activities proposed in this project,* ***none of the proposed activities would occur on private lands."***

This description is reiterated in the portion of the EA you reference in your comment (pg. 3-184):

> *"The entire Project Area consists of approximately 26,000 acres or 40.6 square miles. Of this, approximately 15,000 acres (23.4 square miles) are National Forest System lands and 11,000 acres (17.2 square miles) are in private holdings."*

Project Areas are developed for the sake of analysis, and are typically bound by either natural features (i.e. rivers) or are consistent with U.S. Forest Service Compartment boundaries. Compartments are geographic units that consist of both National Forest System lands and private lands. On National Forest System lands, Compartments are further divided into stands, based on the existing vegetative type (i.e. red pine, aspen, open, etc.). Of the ~26,000 acres of land within the Project Area, ~15,000 acres are National Forest System lands. Of the ~15,000 acres of National Forest System lands, only the acres shown on Table 2.1 in Chapter 2 would be available for treatment activities under this project.

In addition, page 3-66 of the EA states:

> *"If Forest System roads and their associated uses are found to adversely impact KBB or its habitat, they would be relocated or decommissioned."*

This statement is consistent with Forest Plan standards (S) and guidelines (G) (Forest Plan, pg. 2-26):

G	*Karner Blue Butterfly*		
	1	*Implement the Karner Blue Butterfly Recovery Plan (USDI-Fish and Wildlife Service 2003b, or current version).*	***S***
	2	*Resource management activities, such as road and trail construction and vegetation management, will be designed to protect and improve potential Karner blue butterfly habitat.*	***G***
	3	*Roads and trails may be relocated or decommissioned, as deemed necessary, to protect wild lupine.*	***G***

80D: Your comments refer to following passages:

> *"Under Alternatives 2 and 3, road closures would occur which would reduce the spread of NNIS through road maintenance activities such as plowing and grading, and would reduce the amount of vehicle disturbance that creates suitable conditions for the germination of NNIS. It would be expected that some spread of NNIS would still occur from populations already established along road corridors."* (EA, pg. 3-37)

These statements refer to the reduced spread of NNIS along the roads within the WRSNA as a result of road closures.

> *"Depending on the level of periodic maintenance, most of the county roads would continue to be passable with a low-clearance passenger vehicle. This would be compromised at locations where loose sand accumulates at the bottom of slopes and on the tighter corners. The roadbeds of the county roads would continue to be well-established and there would be adequate vegetative clearing along all of the open roads to allow for vehicle passage. Under Alternatives 2 and 3, there would be increased amounts of traffic related to timber harvesting on both the county and the existing Forest Service roads. Road improvements and minor amounts of road development would be necessary in some locations to accommodate this use. These improvements could include leveling, hardening, road clearing, the development of specified entrances, and drainage improvements. There would be temporary disturbances to the primary haul roads, in which rutting, compaction, and soil displacement would occur. These areas would be identified and rehabilitated post-sale. In some instances, user-conflicts would occur in areas where timber harvesting activities take place. This would occur most often in the areas used for recreation by the public. There is no difference in the acres of vegetative treatments between Alternatives 2 and 3 so there would be no discernible difference in the amount of road traffic.* (EA, pg. 3-196)

In most projects where timber harvesting and hauling is a part of the proposed action, improvements to the existing road system are necessary to facilitate these activities as described in the EA (pg. 3-203):

> *"Forest and county-maintained roads will continue to be utilized to conduct management activities throughout the Project Areas under all of the alternatives. Improvements will be necessary on some of these roads in order to accommodate these management activities. The level of improvements that are maintained will vary based on the existing and anticipated use of the road at the time of improvement. The end result will be an improved transportation system that is in accordance with Forest Plan direction (2006) and that provides for both public and administrative use."*

Under all of the alternatives, there would still be roads available within the Project Area that are not improved or maintained as a result of this project.

Comment 80E: The change in scenery related to this project was considered in the Scenery Management portion of the EA (pgs. 3-172 thru 181). For all alternatives:

> *"Implementing the Forests Plan Desired Future Condition would affect the scenic integrity objectives in the Project Area primarily by preserving the corridor of the White River (including the North and South Branches), promoting old-growth forest characteristics in riparian environments, and providing habitat suitable for the Karner Blue butterfly."* (EA, pg. 3-180)

Specific to Alternative 1,

> *"The distinctions between the vegetation patterns of private and National Forest System lands would be relatively small. Approximately 6-7% of the landscape would appear more open and management activities would occur to maintain open canopy conditions. In these areas, prescribed burning activities would serve to stimulate the seedbank of the soil and promote the*

appearance of new species of grasses, forbs, and sedges, and leave evidence of each treatment (i.e. fire scar, small tree mortality). The forested areas of National Forest System lands in MAs 4.4 and 6.1 would remain in the existing scenic condition, with few expressions of the desired landscape elements." (EA, pg. 3-180)

Specific to Alternatives 2 and 3:

"The restored savannas would partially meet the scenic integrity objectives in each MA of the Project Area, and serve to differentiate the habitat goals of private and National Forest System lands. Areas that are now heavily forested would appear more open and management activities would occur to maintain open canopy conditions. Prescribed burning activities would serve to stimulate the seedbank of the soil and promote the appearance of new species of grasses, forbs, and sedges, and leave evidence of each treatment (i.e. fire scar and small tree mortality). The savanna areas of National Forest System lands in MAs 4.4 and 6.1 would produce a moderate degree of the desired scenic condition, with common expressions of the desired landscape elements occurring in some harmony across the Project Area. The forested areas of National Forest System lands in MAs 4.4 and 6.1 would show evidence of other timber harvesting (i.e. plantation thinning and regenerating aspen and oaks). The scenic objective in MA 9.2 would not be directly affected, but there would be a greater contrast in the characteristic landscape elements among MAs with Alternatives 2 and 3. Fewer Forest roads open to motorized uses would further promote a more naturally appearing landscape." (EA, pg. 3-181)

Comment 80F: We acknowledge your opposition to Alternatives 2 and 3 as preferred alternatives for the Savanna Ecosystem Restoration project.
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Commenter: Chuck Woolworth
Response:
Comment 81A: We acknowledge your opposition to the road closures associated with the Savanna Ecosystem Restoration project.
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Commenter: Pamela Zuwerink
Response:
Comment 82A: We acknowledge your opposition to the Savanna Ecosystem Restoration Project.

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